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Vol. CCXLV No. 6268 — LONDON, OCTOBER 7, 1955 — PRICE 8d.

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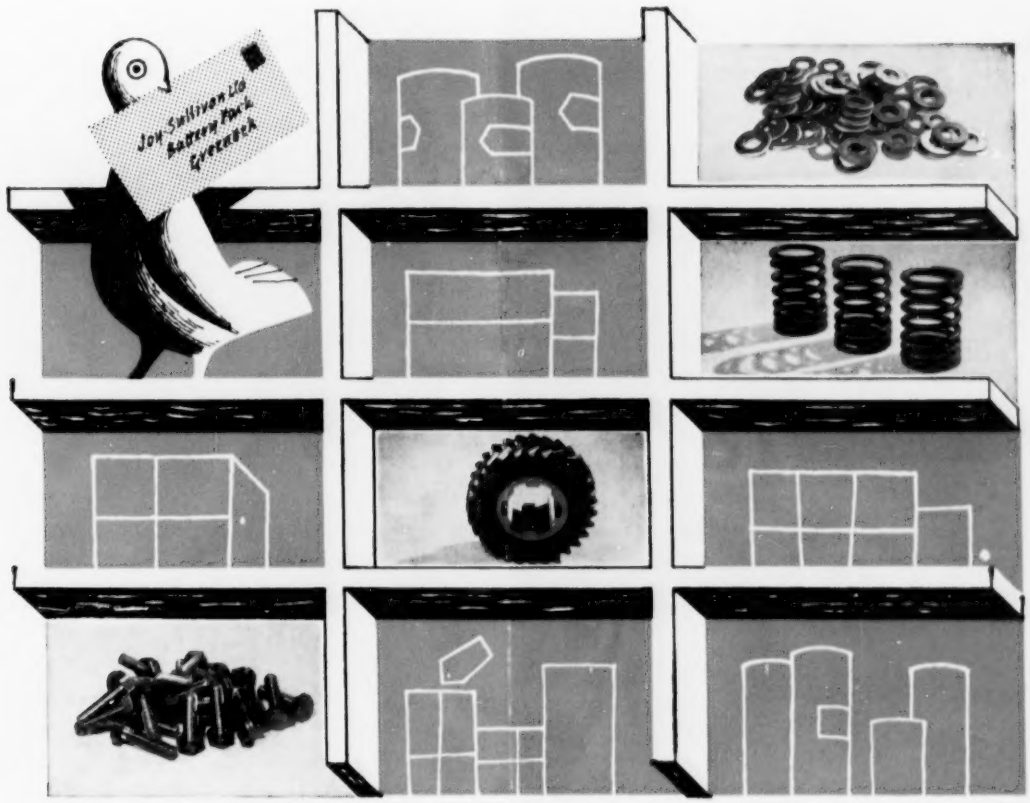

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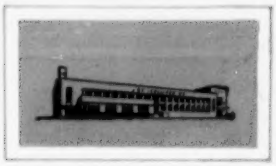

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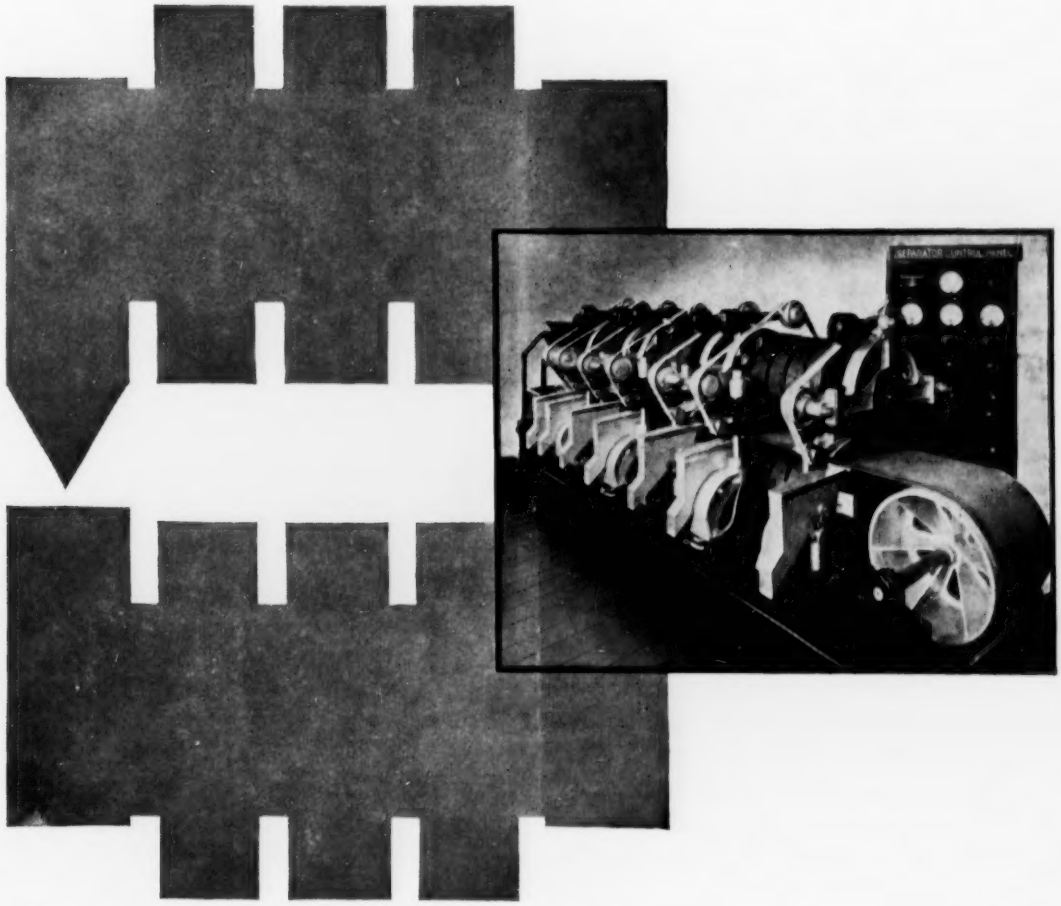

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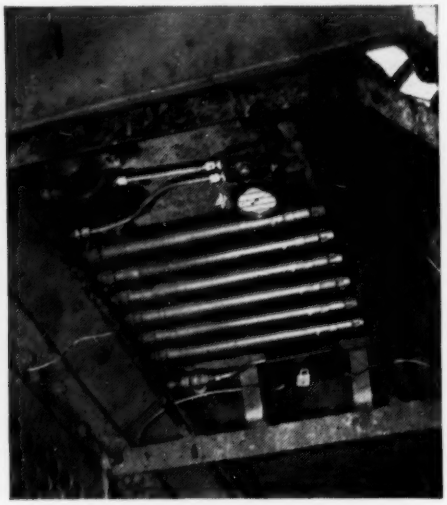

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The Mining Journal

Established 1835

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NOTES AND COMMENTS

Silence on Wage Restraint

The Lord Mayor's dinner to bankers and merchants is a suitable occasion for reviewing the country's financial status but not for announcing the Government's economic policy. Mr. Butler did no more at the Mansion House this week than he did at Istanbul (and will presumably do later this week at the Conservative Party Conference); he emphasized the marginal nature of the crisis and his determination to hold the pound sterling at its present value; he insisted on the continued need for monetary restraint, promised that public expenditure would be tightly controlled, and assured one and all that the Government would not shrink from painful duty. An odd fact is slipped in here and there to reduce the monotony of the performances, to substantiate the thesis and to swell the already growing confidence in sterling.

Other Ministers have been encouraged to drop such hints as will encourage the belief that the Government is in vigorous control while not offending Parliament's rights to hear first the policy of Her Majesty's Government—Mr. Sandys has promised a reduction in the housing subsidies, Mr. Heathcote-Amory and others have made heavy allusions to a shorter period of conscription. The delicate and immensely difficult task of maintaining confidence in the currency and economy, while respecting Parliament's privilege, has been carried out extraordinary well in the past weeks (and confidence is of vital importance, as Mr. Butler showed when he said the gold loss to Europe in September ceased after he had spoken at Istanbul). But if the Government are past masters at playing for time, what will they do when the time actually arrives!

There may yet be an autumn budget. Indeed there is a good administrative case for having one in order to polish up the rather scrappy finance bill pushed through in the spring. If one is administratively desirable, then the opportunity is at hand to tack on to it such changes in taxation as Mr. Butler may, by then, have thought necessary. But if Mr. Butler found he had to increase taxation he would be admitting—as he has never done yet—that his spring budget was misconceived.

There is more general agreement that cuts in public expenditure will form the major part of the Government's programme and Mr. Butler himself promised this week to blow off his share of the froth. Cuts in housing subsidies, a review of defence expenditure, conscription for less than two years—all these are virtually assured. But there seems to be a definite danger of looking on "cuts in public expenditure" as a painless way of eliminating inflation. It is true that the public sector is very largely outside the scope of orthodox monetary policy but it is also true that most of the expenditure of the nationalized industries has been "approved"—power station construction, mine development, road building, railway modernization and so on are all to go ahead. It may irk some people that gas and electricity are competitively advertised for domestic consumption but the cost of that advertising does not disturb the balance of payments. It is absolutely essential to bring the nationalized industries under more sensitive financial control, but it would be wrong to think that the end of inflation would be its consequence. It is only in defence and the social services that any substantial cuts can be made— if substantial cuts are required. Substantial cuts are probably not required to cure a marginal crisis; but if they are not required to remove the froth they are certainly necessary to strengthen, as the Chancellor put it, the gravity of the broom.

Oddly enough, the Chancellor had least to say of what now appears to be the greatest danger—wage increases. All else is, or can be got, under control. But there seems every likelihood that the engineers, miners, railway men, transport workers and others are prepared to press their wage claims to the point of crisis. Mr. Butler has many times spoken of the need for wage restraint but this week he was strangely silent. Are wage claims alone to be left free to wreck the economy by swelling domestic demand, absorbing potential exports and pricing available exports out of their proper markets?

Wage increases on a substantial scale must surely invite an autumn budget, and a more penal income tax rate. Yet, if it can be avoided, an autumn budget should be dispensed with. For what is really required is a strong and reforming 1956 spring budget. The Chancellor has plenty to get his teeth into. He has been advised how to revise the entire tax structure. There are some changes—a revision of mining taxation and oversea companies taxation are among

the most deserving—which will involve some remission of taxation. The economy must be strengthened sufficiently to be able to invest in these worthwhile tax remissions. If public expenditure and wage claims can both be moderated there is no reason why the country should not be in shape to take a reformist budget next year.

Asleep on the Doorstep?

The official announcement in London on Wednesday of this week that Kennecott Copper Corporation had acquired a 52 per cent interest in the big Nigerian columbite-tin producer, Tin and Associated Minerals, confirms the statement to this effect appearing in the American press a fortnight ago, and recorded in last week's issue under "Company News and Views."

It would be less than fair to point out that if an important mining company registered in the British Commonwealth were to relinquish its control to foreign interests, there could be no better company to which it could pass than Kennecott Copper Corporation. But this is hardly the point. For this is the second announcement within a matter of weeks pointing to the failure of U.K. mining companies to take advantage of acquiring important raw material resources. The other case in point, reported in these columns in our issue of September 23, concerned the acquisition by a Canadian mining group of copper deposits at Avoca, County Wicklow, Eire, which had been known to exist for a long time.

These two events sit uneasily beside a recent declaration made by Mr. Robert Annan that "it is easier to find money than mines." Indeed, it is extremely difficult to believe that U.K. mining interests were not approached in the case of Tin and Associated Minerals and that they were not aware of the possibilities of exploiting the Avoca copper deposits.

In some ways the acquisition of Tin and Associated Minerals by Kennecott Copper Corporation provides the more interesting situation. This Nigerian mine can be rightly described as the second largest producer of columbite in the world, and negotiations for its sale must have begun before the U.S. stockpiling authorities declared their intention of withdrawing from the columbite market, so that the price then available for columbite-tantalite concentrates was still being supported by the 100 per cent bonus payable to producers of the ore. That negotiations were not broken off when it became known that existing contracts, which included the 100 per cent bonus were not to be continued beyond the end of 1956, clearly indicates Kennecott's confidence in the future outlook for columbium. In fact, Kennecott, in conjunction with the Molybdenum Corporation of America have recently negotiated for the purchase of another columbite-tantalite deposit at Oka, near Montreal, in Canada.

Although the purchase price of 52 per cent of the equity of Tin and Associated Minerals was not disclosed, it is improbable that payment was so prohibitively high as to preclude bids from U.K. companies. If one is to hazard a guess as to the reason why companies in this country evinced no interest or, at least insufficient interest to acquire control, the soundest line to take would perhaps be to say that it stemmed from a misreading of the vital role the metals are playing and will continue to play in the development of jet engines, guided missiles, rockets and other uses where such key alloying materials are required to withstand extremely high temperatures. This in turn may well have led to a more pessimistic appraisal of the future prospects for columbium and tantalum than was warranted. Yet, the fact that U.S. authorities were prepared to offer a 100 per cent bonus on top of the base price of £1,040 per s.ton of concentrates containing 65 per cent columbium-pentoxides to insure that supplies were available to meet U.S. national defence requirements, renders it impossible to submit this argument in mitigation for the fact that Tin and Associated Minerals is now under the control of foreign rather than British interests.

Silver's Strong Statistical Position

The feature of the London and New York bullion markets in recent weeks has been the persistent demand for silver, largely for industrial consumption. In London the silver price now stands firm at 80⅛d. per oz. for cash and 79⅞d. per oz. for forward metal—the highest quotations recorded since the spring in 1920. In New York record levels have also been established and the price there is currently quoted at 92½ c. per f.oz.

Close observers of the international silver market will not be surprised at the present high price prevailing for the metal on both sides of the Atlantic. At the beginning of this year free stocks in the U.S. Treasury were very low amounting to only 13,700,000 oz. which compared with 49,600,000 oz. at the beginning of 1954. Indeed, Handy and Harman in their review of the silver market last year pointed out that if the rate of withdrawal during 1955 continued at anything like the previous year free stocks would soon be exhausted. It was also mentioned, however, that the U.S. Treasury had some 34,500,000 oz. on hand in subsidiary coinage to act as a second line of defence against a shortage of the metal. Bearing these figures in mind and taking into account that the New York market has been relatively starved of supplies from its traditional source, the Bank of Mexico, very little metal has been available to act as a cushion against the rising industrial demand. Nor does it appear likely that Mexico will be in a position to quickly resume her usual role as a stabilizing influence on the silver price. At the beginning of the year, the Bank of Mexico's official stocks were down to 35,000,000 oz. and these reserves have had to withstand the unexpected large demands made in March of this year from Saudi Arabia and from Western Germany totalling approximately 27,000,000 oz.

Whether the silver price will continue to advance rests with the U.S. Treasury which can now legally unload the metal from its stocks which have been estimated to be somewhere in the region of 1,400,000,000. This reserve has been amassed by the U.S. Treasury under the provisions of the Silver Purchasing Act which requires the American Treasury to buy U.S. mined silver at 90½ c. and allows it to sell at 91 c. Now that the effective silver price is at 92½ c. it can supply the open market from its stocks to prevent any further rise in the quotation.

The U.S. Treasury bullion stocks are obviously large enough to allow supplies to be made available to the open market with impunity. There is, too, the repayment of lease-lend silver which will accrue to it before April, 1957, amounting in all to some 353,000,000 oz. so that there is little reason to suppose the present price level will go higher. But how far and to what extent the U.S. Treasury is prepared to run down its stocks to establish an effective ceiling price remains to be seen. Undoubtedly, those countries under obligation to repay lease-lend silver (India and Pakistan, U.K., Saudi Arabia, Australia, Ethiopia and the Fiji Islands) have been building up their silver stocks which has clearly contributed to the present shortage of metal. It seems reasonable to believe, therefore, that once repayment has been made, these countries will be in the market for a considerable period in order to replenish their depleted reserves.

It is too early yet to state whether world production of silver will again decline but U.S. output will most likely be lower owing to the strikes at the copper, lead and zinc

mines from which so much U.S. silver is obtained as a by-product. At any rate, the outlook for silver is brighter than it has been for some years and with all available evidence pointing to annual consumption exceeding current annual production future price levels will be largely governed by the policy pursued by the U.S. Treasury.

World Still Short of Steel

(From Our Iron and Steel Correspondent)

In the steel industry as in meteorology, climatic changes are at times unpredictable. Throughout the world the extent of the demand for steel has far exceeded the most optimistic estimates and there are not, as yet, any visable signs that supplies will overtake requirements before the end of the year.

Production may have reached, or be near its peak. A recession may be just around the corner. But the plans of the steel industry are based on expectations of abounding prosperity and new production records, in the near future. Rising prices in the U.K. the U.S. and Western Europe have not checked the buying movement. There are plenty of consumers who can and will pay the premiums now demanded, and with order books already top heavy, delivery dates are being pushed further and further ahead.

FAVOURABLE PROSPECTS IN U.K.

Prospects for British steel are now much more favourable than they were a month or two ago. In the first half of this year when iron and steel production was far exceeding the target, the industry encountered a growing shortage of raw materials. Scarcity of sea transport and severe weather in Northern ore ports were the main causes of an untimely shrinkage in the impacts of foreign ores. There was a loss of 150,000 tons in the output of home ore owing to the rail strike, and pressure on scrap and pig iron supplies throughout Western Europe and the U.S.A. gave rise to doubts concerning the availability of imported material to bridge the deficiencies in home supplies.

Happily some of these anxieties have been dispelled. Acceleration of ore shipments has enabled the industry to achieve record arrivals in July and August. Contracts have also been placed for the import of substantial tonnages of pig iron and scrap in the fourth quarter, and with new plant coming into production, there are hopes that despite the recession in June, July and August, British ingot production for the year will exceed the target of 19,500,000 tons.

INTERNATIONAL DEMAND

The extent of the shortage of steel is not ascertainable with any degree of accuracy. Possibly it has been exaggerated by over ordering. That is a common practice if there is any likelihood of a pinch, but on this occasion it is noticeable that there have been remarkably few cancellations. Producers of the most urgently wanted types of steel are still declining orders for delivery during the fourth quarter, and those who have opened their books for the first quarter of 1956—not all have done so—have already very large commitments.

British steel makers' experience in this respect is matched by that of the United States and Canada. American steel is booming as never before and the fourth quarter promises to be the busiest of the year. The motor and container plants are absorbing larger tonnages of sheet steel than ever, and the July advance in prices has not checked the demand. British imports of sheets, mainly from the U.S., are expected to exceed 400,000 tons this year, and whilst the British Government has further extended the period for free imports until March next, exports are severely restricted. In fact, during the past two months, our iron and steel imports have exceeded the volume of exports.

Influenced by adverse external trade balances, both the Australian and New Zealand Governments have resorted to a still more severe restriction of imports, but from these restrictions steel imports are exempt.

India too, is hungering for steel and a recent report indicates that in response to an inquiry from that source for 230,000 tons of finished products Japanese steel interests have offered to provide 140,000 tons comprising billets, sheets, rails, plates, round bars, sections and wire products.

RISING PRICES

A common feature of the steel trade at home and abroad is the rising trend of prices. Since the upward revision of the controlled maximum prices in this country—there is no price control over exports—American, European and Australian prices have all been advanced and the differential between British and foreign steel prices is now as much as 20 per cent. Nevertheless it is authoritatively stated that if American steel shipments in the next six months do nothing more than match those of the first half a new all-time high will have been established.

GROWING ORE REQUIREMENTS

Encouraged by a record intake of foreign ore in the third quarter, British sights for the year have been raised to total imports in the region of 11,500,000 tons, whilst U.S. imports are expected to exceed 20,000,000 tons, a gain of nearly 5,000,000 tons over the 1954 figures. Both countries, in fact, are becoming increasingly reliant upon overseas sources of supply and although the great bulk of the rising output from the developing ore fields of Labrador is being shipped to U.S. East Coast ports, sizeable tonnages from that source have also been shipped to this country.

SCRAP SUPPLY

Concerning scrap supplies there is some uncertainty chiefly due to the export controls exercised by the U.S. Government and the High Authority of the European Steel Community. But British imports are still running at a rate about 50 per cent higher than last year, and as deliveries of home bought scrap have certainly not declined. it has been found possible to increase the stockpiles of scrap at the steel works and foundries to the extent of about 100,000 tons. Even so the position forbids complacency. Total scrap stocks in the U.K. at the end of July amounted to no more than 682,000 tons which is 316,000 tons less than at the end of August, 1954.

Possibly the steel industry will get by without a scrap famine in the coming winter but there is no room for complacency and best informed opinion is that every available ton of ferrous scrap will be needed to maintain the steel plants and the foundries in a state of full-scale activity.

To sum up, the world demand for steel in still imposing a severe strain upon capacity at all stages of production. With modernized plant of high technical efficiency, and keenly competitive prices, the British steel industry is well equipped to command a growing share of world trade, but even at the cost of a temporary sacrifice of more profitable sales abroad the makers are concentrating upon the fulfilment of the swollen requirements of the major metal using industries and the ever mounting capital investment programme.

Do We Need a Mineral Resources Policy?

Last November Mr. D. A. Oliver, director of the B.S.A. Group Research Centre, presented a paper on *Mineral Resources Strategy* at a conference on research and industrial productivity which took place in London under the auspices of the D.S.I.R. and the British Productivity Council. The theme of Mr. Oliver's paper, which aroused considerable interest at the time, was that minerals productivity would be increased if greater co-ordination of the right kind could be established between all the interested parties—that is to say geologists, mineral dressing and refining specialists, mining engineers, mining and finance houses, local territorial authorities, fabricators and users, and finally government. An opportunity was provided for a further discussion of this thesis at a public Symposium on Mineral Resources Policy, held under the auspices of the Institution of Mining and Metallurgy at the Royal Society of Arts, London, on September 22 last. The Institution is to be congratulated on this most useful initiative which, it is to be hoped, will in due course bear fruit. Inevitably at public meetings of this sort, such a very heterogeneous collection of views are presented that the central issues tend to become obscured. In what follows we have, therefore, endeavoured to present these issues as they appeared to us to emerge from the papers and discussions at the Symposium.

In considering the need for a conscious national policy on mineral resources, the point of departure is the virtual certainty that, whatever the short term indications may be, in the long term we, in common with the rest of the world, must prepare ourselves to meet a vastly expanding demand for metals. The Paley Report, as well as more recent developments, such as the long term stockpile objectives recommended by the U.S. President's Committee on Minerals Policy, and the establishment of a Foreign Minerals Region of the U.S. Bureau of Mines, all point to the certainty of increasing U.S. demands on the mineral output of the rest of the world. This is a demand which, on economic grounds, the Commonwealth will surely wish to satisfy as one of the most promising long term solutions to the sterling area's chronic balance-of-payments problem.

However, side by side with the U.S.A.'s increasing dependence on foreign mineral production, the Commonwealth's own mineral requirements are likely to expand in response to the rising standard of living which must be looked for in backward Colonial territories quite as much as in Britain (with her added need for manufactured exports) and in the other industrialized areas of the Commonwealth. Moreover, we must expect this position to be aggravated by a similar trend throughout the rest of the Free World, while the possibility cannot be entirely discounted of a change in the climate of East-West relations to the point where the Iron Curtain countries re-enter the world metal markets as heavy buyers of those metals of which they are deficient. (Sooner or later the U.S.S.R.'s accumulated gold reserves must surely be put to use.)

FORESIGHT IS CHEAPER

No doubt in the initial stages, rising prices will, by lowering pay limits, help to keep production in step with growing demand, but the probability is that in the long run the countries with the greatest foresight or, if all are equally important, those countries with the longest purse, will turn out to have acquired preferential access to most of the world's potentially important mineral areas.

This prospect points to two urgent necessities for the Commonwealth. First, Commonwealth mineral production must be greatly expanded both to meet its own growing industrial requirements and as a major dollar earner (whether exports take the form of raw materials or processed manufactures is largely irrelevant to this particular argument). Secondly, we must ensure that the financial control of the new deposits to be opened up remains within the Commonwealth. It is, for example, no solution to find that the finance for the opening up of some deposit which is in critically short supply has only been achieved on a basis whereby the principal and interest is to be repaid to the United States in physical metal at a price which may quite possibly turn out to have been below that ruling at the time of delivery.

Irrespective of whence the initiative comes in considering these problems, it is apparent that considerable gaps in our statistical data will need to be made good before we are in a position to take a factual view of our future requirements and resources on a British, let alone on a Commonwealth, basis. Moreover, it will rapidly become apparent that an early problem at both national and Commonwealth levels will be the co-ordination of existing facilities, the strengthening of facilities which are not already adequate and even the creation of new facilities where these do not already exist. This applies not only to our statistical equipment for providing approximate but up-to-date world production, consumption and stock figures and trends, but also at subsequent stages to the compilation of geological data (a sort of Commonwealth minerals audit), to the advancement and dissemination of the "know-how" of extraction metallurgy, to the recruitment of trained personnel and to the mobilization of financial resources. Moreover, from the consumer's point of view at least, research into the whole problem of substitution and conservation may need reappraisal. Indeed, owing to the time lag in bringing new mines to production, changes in the pattern of consumer usage often supply the only short term solution to a sudden crisis in supply.

If all this is beginning to sound to the reader like a case for long-term planning, the reader is right. However, in taking a considered long term view of this problem Britain would not be in undistinguished company, as this is precisely what the United States—that citadel of private enterprise—has in fact been doing during and since World War II. It is true that she has been compelled to do it in order to safeguard her industrial and military raw material requirements but the compulsion in the Commonwealth is no less real, even though it may be less immediately apparent.

True, the problem is more difficult in the case of the Commonwealth than in the United States in that much of the policy will have to be planned at Commonwealth level, while the compilation of statistics and of the inventory of known resources also require co-operative effort at this level.

CAN BRITAIN PLAY HER PART?

Be that as it may, this is a matter where the initiative must obviously come from Britain and there is much to be done to put our own house in order before we are competent to consider the wider picture. In the first place, it seems pertinent to ask what Cabinet Minister, and through him what section of what Ministry is to-day charged with the responsibility of determining, and giving effect to, Government policy on matters relating to the domestic and Colonial production and the use of minerals—other than coal, iron, oil and possibly uranium. If this Minister and this Department were already clearly identifiable and busily at work, the problem in its early stages would become much simplified. However, we have no knowledge of any such activity and, if it does not in fact exist, producers, users and indeed all those who can see the shape of things to

come, have the initial task of arousing the Government to the realities of the situation.

Those producers who have for years been negotiating with the Government through the British Overseas Mining Association (or who are perhaps about to do so through the United Kingdom Metal Mining Association), should not give up hope of the Government seeing sense merely because of previous frustrating experiences with the Treasury. After all, some branches of Government, more especially those concerned with exports or defence, should be (and, when things get tough enough, will be) as anxious as any private consumer to safeguard mineral resources. True, the producer might, with some justice, argue that so far from his having to seek favours from the Government, it is, under present conditions, really the Government and the consumer who stand in need of his help. The fact nevertheless remains that, as the United States and Canada have already demonstrated, Government assistance, intelligently applied, can be of real benefit to the mining industry however prosperous or potentially prosperous it may be. Who, for example, in our own mining industry, whether at home or overseas, would not welcome a constructive Government policy on taxation or on the acceleration of geological surveying or on fundamental research into mineral dressing?

NATURE OF THE PROBLEM

It is tempting when some major task has to be tackled, to set up a new organization to do it. In Britain, however, it is, as often as not, the least successful approach and British industry is littered with the wrecks of such grand conceptions. The problem we are considering is essentially one of co-ordination. In a number of directions the machinery and the information already exist, if only they can be brought together and put to use. In some cases, such for example as consumer statistics, existing facilities may need to be strengthened, and there may prove to be one or two directions in which entirely new facilities need to be established, as, for example, the much discussed central ore treatment laboratory.

Such effective co-ordination can, however, only come from identity of purpose (born of an awareness of future dangers) and a determination both among industrial leaders and Government ministers not to allow the central issues to become obscured by sectional interests. Such unity of purpose is as a rule only generated in the face of actual or impending crisis, with the result that emergency action has then to be taken under crisis conditions. Hands are forced; *ad hoc* decisions are taken, the future is mortgaged and we eventually sit back exhausted by the quite uneconomic emergency measures which have had to be taken. At present our mineral supply position is some way from being critical as we in Britain have become accustomed to understand crises. Is it nevertheless too much to hope that for once we may anticipate and avert a crisis by acting now, rather than having eventually to grapple heroically with an inherently impossible situation?

To-day—as 40 years ago—the initial step, of course, remains the need to arouse the Government first to the present opportunities which are being lost to our economy by official neglect of the mining industry—here and overseas—not least by the crippling effect of present tax policies and, secondly, to the eventual condition of crisis towards which the world's metal supply situation is drifting. This is a matter in which the initiative must be taken by private industry—alike by the producer and user. As matters now stand the latter may be the more likely to get a hearing and should, therefore, perhaps be encouraged to make most of the going initially.

Even at this very early stage the industry may find itself handicapped by the absence of statistics with which to support its case, and some preliminary fact-finding may well prove necessary. In this connection, the great thing is not to attempt anything too ambitious or detailed. The most accurate statistical survey is unlikely to have an error of less than 5 per cent on the consumer side of the equation, whereas it should be relatively easy, by using available information supplemented by intelligent and informed guesswork, to present a picture, accurate to perhaps 15 per cent, of the requirements not only in Britain but in all the principal consumer countries. Such rough figures should be sufficient at least to indicate the possible extent and duration of the immediate world shortages of, for example, copper or nickel, while the imbalance of future consumption over production so far scheduled promises to be so great that even quite substantial statistical errors are unlikely to invalidate the general conclusion.

WHAT ACTION SHOULD WE URGE ON GOVERNMENT?

Assuming that industry has been successful in arousing the Government's awareness, for what then should it ask?

The first step would seem to be to urge the appointment of a Minerals Advisory Board which would both help to formulate a Government Minerals Policy and assist the responsible minister to give effect to this policy so far as possible through existing facilities. The Board should also be in a position to advise on where the strengthening or modifying of these facilities appeared desirable or (if absolutely necessary) where new facilities should be established. In this latter eventuality the Board should be so constituted as to be able to serve as the instrument through which these facilities become established.

This may seem a somewhat empirical approach, but it at least has the virtue of being likely to generate less obstruction (and, incidentally, to be quite a lot cheaper) than any root and branch approach. The membership and staff of the Board would, of course, have to be so constituted as to earn Whitehall's positive co-operation (as distinct from the polite acquiescence which has so often proved to be the kiss of death). Yet it would remain ineffective without the wholehearted participation of the producing, consuming and scientific interests involved.

FINDING THE MEN FOR THE JOB

As often in this type of situation, the selection of the chairman and permanent staff might well be decisive—for good or ill. It is probably too much to hope that someone could be found to serve as a *full-time* chairman who had the high administrative skill for the task as well as the necessary personal and technical authority and the flexibility of mind to re-examine old problems from new angles. However, even a part-time chairman with these qualities could achieve much if the men appointed to the permanent staff—and initially there need not be many of them—were of similar quality albeit of less eminence in their various professions. The producers and users would have to be prepared to release such men from their industries—if only temporarily.

The industrial revolution of the mid-twentieth century appears to have assured the progressive expansion of mineral requirements at a rate out of all proportion to anything we have previously experienced. However, we yet have time, if we take action now, to ensure an orderly expansion of our mineral industries to meet these requirements. To take action now will be troublesome and certainly not immediately rewarding, but to balk the issue will make inevitable not only the need for far more painful efforts but also the certainty of far greater dislocation to our economy once the blossoming of the new technologies forces the impending raw materials supply crisis upon us—be this in five or in twenty-five years time.

Transfer of Winding Gear at Chibuluma, N.R.

The transfer of a complete mine winding gear from Mufulira Copper Mines Ltd. to Chibuluma Mines Ltd., both members of the Rhodesian Selection Trust group, has made it possible to overcome delay in the delivery of essential machinery from the United Kingdom and ensure that Chibuluma will commence mining operations before the end of this month. The following article describes the dismantling of the gear and its re-erection at Norrie Shaft, Chibuluma, during twelve days. It is worthy of note that the estimated production from Chibuluma at 16,000 tons of copper and 250 s. tons of cobalt may turn out to have been ultra-conservative. It now appears possible the production may prove to be nearer 20,000 tons of copper and 375 s. tons of cobalt.

Although winding gear for the inclined Norrie Shaft at Chibuluma Mines Ltd., Northern Rhodesia, has been on order from the United Kingdom for over three years, its delivery has been delayed. Thus, although the Norrie Shaft had reached a vertical depth of 870 ft., there appeared no possibility of having the equipment in Northern Rhodesia in time to meet the scheduled date of production, fixed for the middle of this month.

The temporary headframe at Norrie Shaft, part of which will remain in use until the permanent equipment is installed

At this point Mr. J. P. Norrie, consulting engineer of the R.S.T. group after whom the Norrie shaft is named, advised that consideration should be given to the use of a hoist no longer in operation at Mufulira Copper Mines Ltd., a member of the R.S.T. group some 36 miles away.

The result was that in less than two weeks — twelve days to be precise — a complete mine winding gear was dismantled, transported and erected at Chibuluma, thereby enabling the property to begin hoisting copper-cobalt ore before the end of this month.

PROGRESS OF THE OPERATION

Once the decision to transfer the winding gear had been taken, personnel of the Chibuluma mine staff travelled to Mufulira. With the co-operation of the local mine management and engineering staff the work of dismantling began. The winder, which had not been in use since the installation of Mufulira's Boise Shaft hoist, some eight months ago, consists of a double winding drum, hoist, bed plate and driving motor.

The various dismantled parts were loaded on to lorries and trailers. Most difficult to transport were the drums, which weigh 27 tons. A huge, low-loader trailer, hauled by a powerful transport lorry, was used for this purpose, but the load was too wide for the bridge which spans the Kafue River 10 miles from Mufulira on the direct road to Chibuluma. Consequently the drums had to be driven by way of Ndola, a detour of about 80 miles. At Chibuluma special foundations had to be laid for the temporary hoist, sited between the foundations for the permanent winding gear and the shaft.

When the permanent hoist is installed 8-ton skips will haul the ore to the surface. Meanwhile, the temporary hoist will operate 5-ton skips which are being obtained through the co-operation of the mine staff at Roan Antelope, the group's other operating mine in the Copperbelt.

PLAN FOR CHIBULUMA

Underground, the work of developing the mine prior to production is well up to schedule. The Norrie Shaft, inclined at 38 degrees to the horizontal, will be the main rock-hoisting, materials handling and travelling shaft. An upcast ventilation shaft has been sunk and a service winze, at the same inclination as the Norrie Shaft, is in use as an ancillary shaft for initial development and also provides a second entrance to the mine.

Initially, ore will be extracted between the 260 ft. and 570 ft. levels. There will be main haulage levels at 445 ft. and 570 ft. and ore and waste rock will be loaded into the skips from a shaft loading box on the 660 ft. level.

On surface, a concentrator is being constructed and equipped for operation early next year. R. S. T. Services Limited has a pilot plant near the site where extensive research into the methods for separating the copper and cobalt minerals from the ore has been satisfactorily completed. After crushing and grinding, the ore will be treated in flotation machines and so conditioned to promote a separation giving a copper mineral concentrate and a cobalt mineral concentrate.

The copper concentrate will be smelted elsewhere in the Copperbelt while the cobalt concentrate will be treated in a plant which is being built by Chibuluma Mines Ltd. near Ndola.

Excavating the shaft collar

New Safety Equipment for Tin Dredges in Malaya

In order to obviate any risk to personnel during the operation of winches on its tin dredges in Malaya, Sungei Way Dredging Ltd. has installed a warning device on one dredge which ensures automatic alarm by siren 30 seconds before the winches can be started. The equipment, described in the following article, was designed by A. E. Mohring and Son, consulting electrical engineers, in conjunction with Chamberlain and Hookham Ltd. Although the equipment is thus viewed purely as a surface installation, it obviously has a wider possible application within the mining and quarrying industries.

The standard equipment of the warning device complies with safety regulations introduced by the Malayan Governmen and can be used in conjunction with various makes and types of winch electrical equipment. The first installation has proved highly successful and several additional control panels are on order. Safety equipment of this kind also has obvious applications in other directions within the mining and quarrying industry.

A typical tin-dredge may be as much as 300 ft. long. It dredges by means of a large bucket chain mounted at the front, the tailings being deposited behind. Thus the paddock in which operations are carried out virtually moves with the dredge. On board the dredge are installed the tin-winning plant and the winch gear. The dredge is kept in position by five mooring ropes ; two to port, two to starboard and one forward. These are run off the winch drums to the shore where they are made fast. The dredge is not propelled by a screw, but pulls itself on to its work by winching in the mooring ropes.

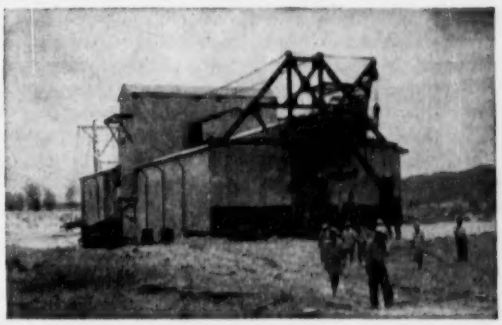
During a halt for general maintenance repairs a fitter making adjustments to parts of the winch clutch or brake gear may well be out of sight of anyone starting up the winch. This has in the past led to several accidents which have caused the Government to insist on suitable precautions.

OPERATION OF CONTROL SYSTEM

The new control system which ensures that a siren is sounded for 30 seconds before any part of the winch mechanism can move, caters for these requirements. As an additional refinement it also ensures that, if the winches are not started within a pre-determined period of up to 20 minutes of the alarm being sounded, the whole cycle has to be repeated before the winches will start. This prevents the winches being started so long after the warning has sounded that the workers have forgotten it.

The warning control panel mounted alongside the mooring winch control desk on the dredge

The control equipment incorporates two Chamberlain and Hookham process timers. The first, set to 30 seconds, governs the period for which the siren is sounded; while the other, set to up to 20 minutes, governs the length of time that can be allowed to elapse between the sounding of the alarm and the starting of the winches. Warning lamps below each timer light when the timers are running and the equipment operates from a single start button.



A tin dredge owned by Sungei Way Dredging Ltd. of Malaya and equipped with the new control gear

THE CONTROL PANEL

This control panel is mounted alongside the control desk, and is incorporated in this instance in a Ward-Leonard control circuit, but is equally suitable for other types of control.

When the operator wishes to start the winches, he must first press the start button on the control panel. This actuates the siren and at the same time starts both process timers. After 30 seconds, the first timer automatically switches off the siren and closes an actuating circuit in the control desk. The winches can then be started from the main control desk at any time during the next 20 minutes. But once this period, governed by the second process timer, has elapsed, the whole cycle has to be repeated before the winches can be set in motion.

GENERAL ACTIVITIES

During the current year Sungei Way Dredging Ltd. will enjoy the full output of three dredges, although one dredge will be closed down for some months for conversion to electricity. When this conversion is completed, all the dredges will be electrically driven and electricity will be taken from the Central Electricity Board instead of the company's own station.

It will be recalled that Sungei Way, in conjunction with other companies of the Tronoh Malayan Group, through the agency of Tromal Prospecting Ltd. recently acquired an interest in an area off the coast of Siam extending to approximately 7,500 acres. The tin values are confined to a bed 12 ft. to 15 ft. thick at a depth of 60 ft. to 70 ft. below sea level. It is estimated that some 49,000,000 cu. yd. have been proven having an average value of 1.45 katis per cu. yd. An operating company known as Aokam Tin Ltd. has been incorporated in the Federation of Malaya to work this deposit.

A Simple Movable Support System

The basic requirements of any efficient roof support system are that the roof must be continuously supported, the support density and load bearing capacity must be adequate for the conditions concerned, the supports must have a high setting load and high initial resistance to yielding, and that the support must be safe and easy to withdraw, move and reset. The following article describes the Ritchie Movable Support System which is presented as fulfilling all these requirements.

The Ritchie Movable Support System is comprised of five main elements, namely floor raft, moving device, pit props and roof bars, and lifting device.

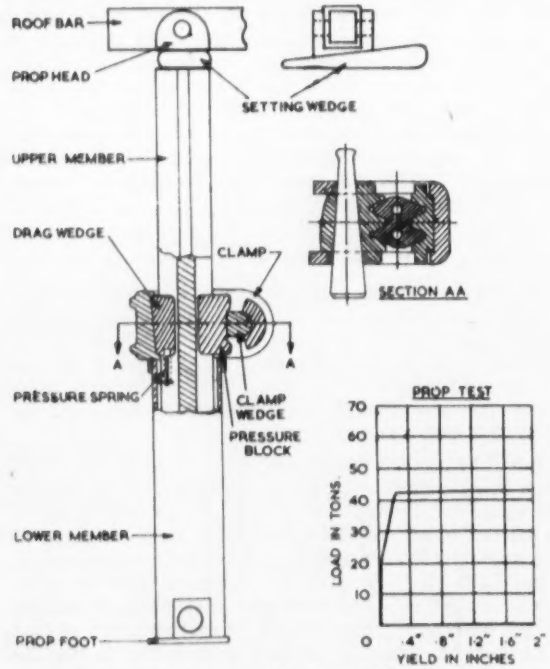
The floor raft is normally formed of two units one of which is guided within the other. These units are fabricated from strong steel sections and plate and are strengthened at all points which are subject to stress. At certain points on the raft reinforced apertures are provided through which the pit props may pass to allow the props to stand on the mine floor. Where the floor is soft springs are provided in the goaf prop apertures to lift these props out of the ground before the raft is moved forward, and if necessary all the apertures may be provided with these.

THE MOVING DEVICE

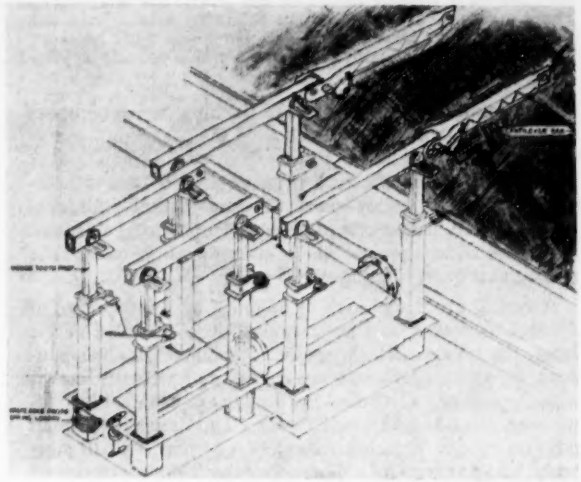
The moving device comprises a compressed air or hydraulically-operated double-acting pushing cylinder, the body of which is attached to the leading floor raft. A crosshead attached to the end of the piston rod is fixed to a movable pin at the goaf end of the rear floor raft so that retraction of the piston and rod draws the rear raft with its prop along guides into the leading raft.

The pit props may be of any telescoping type providing they have some means for prestressing the prop to between 10-12 tons immediately it is set and that it is possible to provide an attachment on the head of which the roof bar may be fixed. Another requirement is that the prop must be easy to withdraw

The roof bars, like the pit props, may be of any type providing they are of a shape which permits them to be attached to the pit prop head.



The Wedge Tooth prop which is provided by Campbell Ritchie for complete installations



Ritchie movable roof supports

In a typical layout the floor raft is formed of a leading floor raft and a rear raft. In both of these rafts four prop apertures are provided. It will be understood, however, that in certain cases such a density will not be necessary and the number of props per unit may be reduced.

The apertures extend right through the rafts so that the pit props stand on the mine floor. It is desirable that the props should have a high yielding resistance and it may be that floor penetration will take place. Springs are therefore provided in the apertures for the purpose of lifting the props out of the ground when they are released.

COAL WINNING

At the beginning of the coal winning cycle the roof is supported up to the face by the link roof bars and the first row of props immediately behind the conveyor. Following the stripping off of the coal the conveyor is snaked over, the props in the leading floor raft are released, the raft with props and bars is advanced by means of the pushing cylinder, the piston rod of which abuts against a pin in the rear raft which still has its props and bars under pressure of the roof.

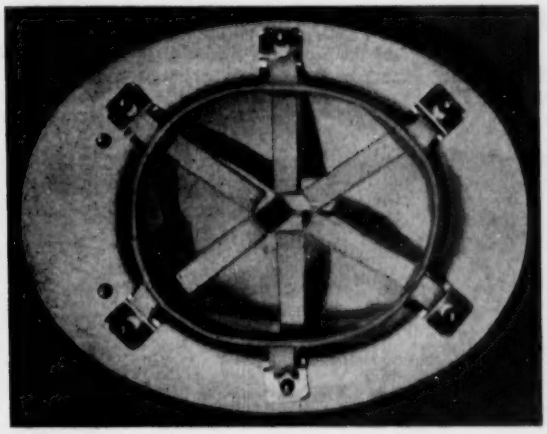
Normally the props and two bars in the rear raft, cooperating with the adjacent rafts are sufficient to safely support the roof, but if desired an additional pair of link bars may be fitted to the ends of the bars in the rear raft and these provide a support almost right up to the conveyor whilst the leading floor raft is being moved.

In the subsequent position the rear rafts are ready for movement, and by reversing the pushing cylinders the rear rafts are now drawn into the spaces in the leading floor rafts.

An interval in the cycle of operations is considered advantageous after moving the leading floor rafts and before moving the rear rafts, as this will allow the props in the leading floor to take up higher load where this is provided by roof pressure

New Material for Mine Helmet Construction

The Panorama Fibre Glass helmet with adjustable leather harness and webbing chin strap



Interior view of clip-on adjustable leather harness on Fibre Glass safety helmet

A new development in mine headwear manufacture is in the use of Fibre Glass for mine helmet construction by Panorama Equipment Ltd., and the tougher-than-steel-resin-impregnated hat thus manufactured is claimed to be the first of its kind produced in Great Britain. Two versions of the Panorama Fibre Glass helmet are produced by the manufacturers, each of the same standard design, but fitted with different harness attachments.

Three of these Fibre Glass helmets were tested against U.S. Federal Specification GGG-H-14b recently in New York, and the report from Electrical Testing Laboratories Inc. stated that the hats met all the requirements of the Specification in the tests completed. Each of the three helmets was tested for insulation resistance, impact resistance, penetration strength and flammability.

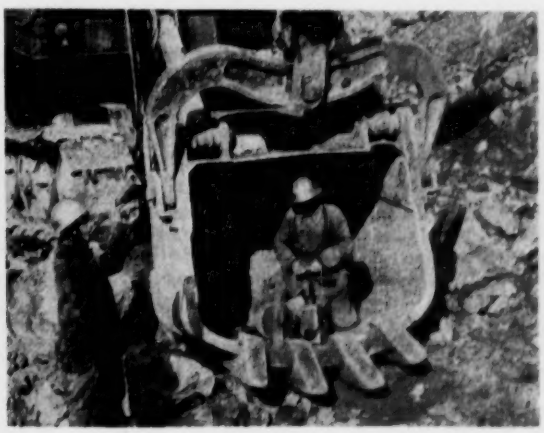
In the insulation resistance test, each helmet was subjected to 2,200 v. and 5,000 v. applied for one minute respectively. Leakage was 1 ma. at 2,200 v. and 3 ma. at 5,000 v. in each case. When one helmet was tested at 20,000 v. for 15 seconds, no leakage was reported. It is interesting to note that the Specification demands that leakage should not exceed 3 ma. at 2,200 v.

In the test for impact resistance, two helmets were conditioned for four days at 50 per cent relative humidity and then for 4 hours at temperatures of 120 deg. F. and 20 deg. F. respectively. Each was then mounted on a standard wood hat block on a Brinell hardness penetration assembly with a ½ in. steel ball resting on a strip of 25-0 aluminium, and an 8 lb. iron ball was dropped 5 ft. on to the centre of the crown. The diameter of the imprint in the helmet conditioned to 120 deg. F. was 0.140, while that in the helmet conditioned to 20 deg. F. was 0.145. A maximum average of 0.177 is specified. In the drop test, the steel ball made an impression on the fibre resin but carbon paper inside showed that the crown did not touch the block.

Penetration strength was shown when a 16 oz. pointed plumbob was dropped 10 ft. on to the crown centre. The point of the plumbob penetrated the crown a distance of 0.28 in. The effective resistance of the Fibre Glass helmet to penetration is revealed by the maximum of 0.38 in. for the Specification. Resistance to flammability was shown when helmets burned at 0.5 and 0.8 in. per min., leaving a large safety factor between actual burn rate and the specified maximum of 3.0 in. per min.

A further helmet produced by the manufacturers, used exclusively in German mines, is the Laminated Plastic Peak helmet, supplied with or without lamp bracket fittings. Another model, the Aluminium helmet, is applicable to operations in quarries and opencast mines. Both are being tested to U.S. Federal Specifications.

Laminated miner's helmet in use in coal mine

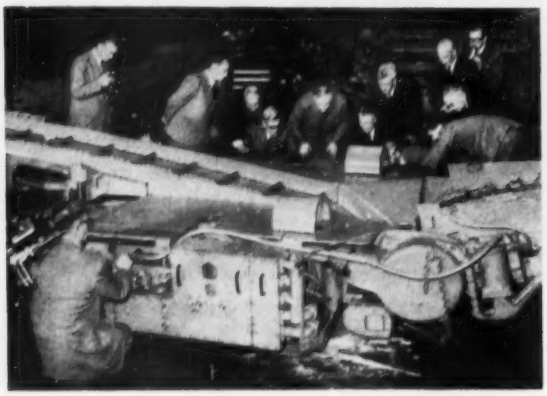


Aluminium alloy helmet used in open quarry

MACHINERY AND EQUIPMENT

Eight Joy Continuous Miners for U.K. Service

Senior officials of the Scottish Division of the N.C.B. visited the Greenock factory of Joy-Sullivan recently to inspect a production line of eight Joy Continuous Miners. All these machines have been ordered for British collieries. One of the



A group of Scottish Division N.C.B. officials inspecting a Joy Continuous Miner destined for service at Riddochhill Colliery.

units was demonstrated for the visitors. This particular Continuous Miner is shortly going into production at Riddochhill Colliery. Mr. John C. George, M.P., chairman of Joy-Sullivan Ltd. stressed the important part which machinery would play in the future development of the coal mining industry in Britain. Machines like the Joy Continuous Miner, with its output of some two tons per minute, would be of benefit to collieries in all parts of Britain.

Air Cleaning by Electronic Methods

The Trion principle of cleaning air electronically is the modern adoption of a discovery made in Germany over a century ago. The principle was later used to eliminate industrial fumes, and when a means of reducing the cost and the size of the equipment was discovered the way was clear to allow installations to be made *en masse*.

Among the Harris-Trion air cleaning equipments manufactured by Harris Engineering Co., Ltd., are Trion power packs mounted on a chassis to ensure mobility and claimed as unique in that instruments truly indicate the exact operating condition of the complete installation, particularly of the rectifier tubes.

A further unit of the Trion system is the ionizing-collecting cells constructed of aluminium for corrosion resistance and ease of handling. All Trion equipment includes a bank of mechanical, waterproof, dry type filters built into the clean air side of the unit.

Intermediate Pumping in Mines

The Megator GH4 pump has been developed primarily for intermediate pumping in mines, and provides a readily mobile unit capable of a capacity and head substantially greater than those of the familiar Megator face pumps. It is well adapted to pumping between levels in horizon mining.

The GH4 has been evolved from the Megator "M" type snore pumps and incorporates the experience gained from the operation of these pumps, at the same time introducing further advanced features of design. It has six shoes, the centre pair being opposed, that is, with the port plate on the opposite side, an arrangement that partly balances the loads on the rotor and bearings.

The GH4 pump has a capacity of 160 Imperial g.p.m. It is normally direct-coupled to a 30 h.p. 960 r.p.m. motor, for operating at total heads up to 350 feet. Alternatively a 20 h.p. motor can be used, for total heads up to 200 feet.

The pump is normally mounted on a welded steel skid base and direct-coupled to the motor. It forms a robust unit of compact design, requiring only low headroom, and easy to handle underground. Other types of mounting and drive can be furnished to meet special requirements.

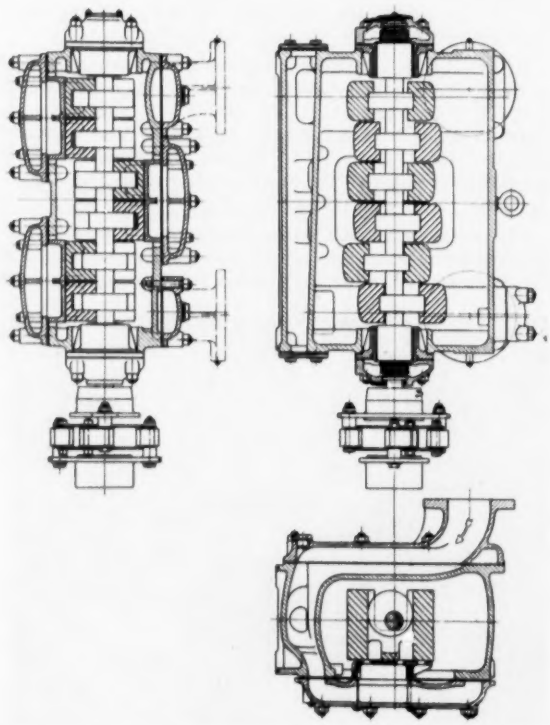
Standard sets are equipped with spring-loaded relief valve, hand unloader for starting, snifter (vacuum-limiting valve) and pressure and vacuum gauges on a suitably protected panel. A non-return valve, which normally requires to be fitted in the delivery line, can be supplied with the set. No foot valve is required, but a suction strainer is essential.

The GH4 has the self-priming and snoring powers common to all Megator pumps. It can run continuously on part capacity and, in the case of intermediate pumps drawing from sumps, enables level-operated control gear to be dispensed with. The rated capacity of the pump is maintained over the full range of permissible heads and is thus unaffected by changes in location and layout.

The simple Megator mechanism of rotor and shoes is combined in the GH4 type with Megator water-lubricated synthetic rubber bearings and radial-face shaft seals. The latter run for long periods without adjustment and the whole pump operates without requiring any lubrication other than that furnished by the water.

The GH4 pump is normally constructed of cast iron with rotor and port plates of heat-treated stainless steel, affording optimum resistance to corrosion and abrasion. Nitralloy rotors can be fitted for maximum abrasion-resistance when corrosion is less active, and, for very corrosive conditions, the pump body and other castings can be in stainless steel.

Approximate overall dimensions of standard colliery set with flameproof motor are Length, 7 ft.; Width, 2 ft. 8 in.; Height, 2 ft. 9 in.



Sectional arrangement drawing of Megator GH4 mining pump

METALS, MINERALS AND ALLOYS

COPPER.—The uncertainty that has shrouded the copper market in recent weeks appears to be lifting and the impression is growing that the forces making for a decline in copper prices are taking command. On the L.M.E., copper has slipped in the past week. Prices on the L.M.E. have been so volitile in the last year that a week's evidence is not strong. But in the United States there has been a marked fall in the price of scrap copper with No. 2 heavy copper and wire scrap now down to a level equal to 44½ c. for refined metal. The fall in scrap is attributed to a growing belief that the custom smelters could not hold their price at 50 c. much longer, as, although buying is still steady, the rush to acquire metal is becoming less impulsive.

This belief was right and on October 5 custom smelted metal came down to 48½ c. for November delivery. It might be thought that, with scrap at 45 c. refined equivalent, custom metal must come down immediately to that level. But scrap bought now cannot be converted to refined before next January, while what consumers need immediately is metal to go into inventory before December 31 to avoid LIFO tax assessments based on the "windfall" profits, arising from using 30 c. copper in goods priced on a 43 c. or more basis. This inventory buying is undoubtedly the greatest impediment to a sharp decline in prices, it may also justify a marked difference between prompt refined, and scrap metal prices. It may not, of course, be an adequate barrier and, in any case, it will go in two months time. This is an added reason for the slump in scrap for there is little confidence that prompt copper will be fetching 45 c. in the New Year.

All talk of the producers raising their price above 43 c. has also disappeared although it is early days yet to regard that figure as in danger. There is one big snag to this line of reasoning which cannot be emphasized too strongly—it presupposed that there will be no major strikes. In this connection, it is worth recalling that the Chuquicamata settlement announced last week was only a truce to permit negotiations to begin and that the dispute was not yet over.

It is, perhaps, worth issuing a word of warning. Copper prices recently have been quite unreal and have served only to ration the metal in a period of acute shortage. They have got to come down. But there is a strong limit to the extent that copper can be beared for the statistical outlook of the metal is strong in both medium and long term. It is no good consumers thinking that the L.M.E. will see prices down—as they hoped it would when it reopened—to well below £200 a ton.

Mr. J. Vuillequez has recently had something to say on the outlook for copper. He estimates by 1965 a world production of 4,500,000 tons with the United States supplying 1,225,000 tons; allowing for secondary production the United States would have to import 500,000 tons. The interesting part of the forecast is that it assumes the United States to be capable of exceeding 1,000,000 tons for a period of over ten years at the least. The Paley Report thought that this figure could be reached only occasionally and under stress and that around 800,000 tons would be the normal annual output. Mr. Vuillequez does not consider that the copper shortage will persist. "There are known undeveloped deposits in various parts of the world which will have to be in operation by about 1962 in order to achieve the consumption and production we have estimated. In my opinion copper will be available in sufficient quantities and at prices permitting it to compete with other materials."

After various hints of its likelihood, Mr. Arthur Flemming officially rejected a request for the release of 100,000 tons of copper from the stockpile and the industry must be extremely glad. What effect such a release would have on the market at the present time with values already receding can too easily be guessed.

In Rhodesia the European Union has declared a dispute with the Chamber of Mines after the rejection of a 15 per cent wage claim. The claim was put forward last October and was rejected, but it has now been revived. There have been a number of riots at Nchanga involving inter-racial fights but it is said that they have no industrial significance.

From Chile it is reported that Chile Exploration Company, a subsidiary of Anaconda, will start producing from the Afrikana mine next year. Another ministerial crisis has occurred but has been settled by the resignation of the Minister of Finance. It will be interesting to see what reaction the Chilean Government shows to the tendency for copper prices to slip. If London leads the way in a decline, as it probably will, then Chile may tend to send relatively more metal to the United States again.

The Export-Import bank has finally sanctioned the loan of $100,000,000 for copper development at Toquepala.

There have been a toing and froing of views on R.S.T.'s copper sales policy in the last week. Mr. Vuillequez was first reported from New York as saying that R.S.T.'s fixed selling policy was a failure although he himself had encouraged it. Mr. Prain replied immediately that it had not been a failure because the R.S.T. price had moved only twice in five months, and in the same period there had been more than 60 changes in the L.M.E. price. Mr. Vuillequez has now modified his original statement and now believes "that the R.S.T. fixed price method . . . is, in our opinion, a sound and effective policy." It appears that Mr. Vuillequez approves of R.S.T.'s policy but believes it can only be completely successful if the other Rhodesian producer falls into line.

LEAD.—The demand for lead in the United States has been quite good and customers are now reconciled to paying 15½ c. per lb. New York for it. Whether the General Services Administration is equally reconciled is the chief talking point on the New York market. *The Wall Street Journal's* metal market review this week stated that "if the Government refuses to pay more than 15 c. a lb. for lead the price will probably fall back to that level again." Not all observers agree since the rise was made on the strength of consumer demand and stockpiling has been very slight in recent months. Furthermore, and parodoxically, the lead industry needs stockpiling (as a standby) so badly that it does not like to see too much stockpiling in action; in other words, the less metal is stockpiled the longer the authority for 200,000 tons of lead will last. There is, after all, an election next year and that authority might not be extended.

TIN.—Tin has been maintained at over 96 c. for spot Straits metal in New York in spite of a number of factors which have induced caution in dealers and consumers. The course of President Eisenhower's illness and the effect that the illness has had on Wall Street have both encouraged buyers to keep their requirements down. The settlement of the dispute at Penang, which had threatened to close the smelter responsible for half Malaya's output, also caused prices to ease. It appears that less than 24 hours before the strike was due to start a full settlement was made of all the points in dispute. Tin was also influenced by the growing belief that copper may have reached the peak of its price and the worst of its shortage and that relief might soon be to hand.

Nevertheless in spite of these bearish influences the statistical position of the metal has not been stronger for a long time past and with a world wide expansion of tinplate production in hand that position should be maintained. Moreover, although the Penang dispute has been settled there is plenty of unrest and cause for concern. If, as now seems likely, Tengku Abdul Rahman is going to discuss terms of surrender with the communists, a complete end of disturbances might be made. But in that event, the communists would probably direct their attention to fomenting industrial unrest through the trade unions and particularly in the tin mines.

Meanwhile the first election has been held in Indonesia and some of the early counts are to hand. It will be some weeks before the results are fully known but it appears that the communists have polled a high vote—already well over two million. There is as yet no danger of their forming a government, even in coalition, but they will form a substantial opposition. The Muslim party seems to be emerging as the strongest and it should be able to form a government. It is as likely as any other party to favour ratification of the I.T.A. More than that it would be unwise to prophecy.

World mine production in July was 15,800 l.tons (against 15,700 in June). Production in Malaya was up to 5,245 tons; Indonesia at 3,420, Bolivia at 2,471 and the Belgian Congo at 1,339 were all down on the previous month.

Senor Juan Lechin, former Minister of Mines is on his way to London from La Paz. He is coming primarily for medical treatment, says *Reuter*, but will also study the possibilities of buying a tin smelter and of engaging engineers for the Bolivian nationalized mines.

ZINC.—Zinc continued in good demand last week on the basis of 13 c. per lb. East St. Louis although zinc futures tended to weaken in sympathy with copper. It appears that 1956 model cars will use on average 5-6 lb. of zinc more than the 1955 models. Next year may not be so good for the motor car industry but this increase should safeguard the zinc producers.

The New Jersey Zinc Co. has announced its decision to reopen its Hanover mine in New Mexico due to the better outlook for zinc.

ALUMINIUM.—Extraction of bauxite from Johore's 10,000,000 tons of known deposits may soon be speeded up as Aluminium Ltd. proposes to begin mining there and that its proposals are being considered by the Johore State Government. Federal authorities, who have studied the proposals, recommend acceptance. The company's subsidiary in Singapore already holds a concession for bauxite mining in the south-eastern tip of Johore between Bukit Pengerang and Tanjong Ramunia. The latter area possesses the only bauxite mine of any significance and last year accounted for most of the 165,000 tons of bauxite produced in Malaya. Output this year has improved steadily and in the first six months amounted to 100,000 tons. Bauxite is also being mined in West Johore.

MANGANESE.—The Vanadium Corporation of America has exercised an option to buy a manganese mining concession in Northern Rhodesia for $1,000,000. The concession was purchased from the Weedon interests of Johannesburg and comprises more than 200 sq. miles.

The concession is believed to contain a large tonnage of unusually high-grade manganese ore, and operations, it is reported, will be on a low-cost basis and will be operated by a wholly-owned Vanadium subsidiary, Rhodesian Vanadium.

NICKEL.—The Sumitomo Metal Mining Co., one of the leading Japanese nickel smelters, has received an offer of nickel ore from the Tradja Mining Co., of Colaca, Southern Celebes. The latter has also proposed that Sumitomo supply capital equipment and technical assistance in the development of a nickel mine at Colaca. Before the war, Japanese smelters used to import ore from the Celebes and did some mining and smelting at Colaca during the war. Nickel ore stocks at Colaca amount to 100,000 tons.

DIAMONDS.—When the Gold Coast Government diamond market at Accra was officially opened in July, 1954, the authorities stressed that its establishment was not an attempt to restrict the marketing of diamonds won by Africans in the Gold Coast to its own diamond market. Thus the facilities formerly provided by the banks for this purpose remained available. It was stated also that licences to deal on the Accra diamond market would be limited to recognized diamond merchants with a capital of not less than £100,000 paid up in a locally registered company, together with evidence of ability to call upon further funds. The position was to be reviewed after the market had been in operation for twelve months, during which time dealers' licences granted were limited to three.

Accordingly, the whole situation was reviewed last July and it is interesting to note that one or two basic changes in the regulations have now been made. The principal change has been the promulgation of an order that as from the beginning of August, 1955, sales of all diamonds won by Africans must be made to the Accra diamond market. This is compulsory and therefore the banks have been deprived of their licences to receive African-won diamonds. At present, there are three overseas companies licenced to deal in the Accra market, but consideration is to be given to the issuance of one or two more licences when accommodation becomes available in the new building (expected to be completed in about two years) which will house the Accra diamond market.

In making this announcment the official government statement declared that the amended regulations would be "in the best interest of the national economy and of the African diamond industry in particular." Certainly, the new regulations which, incidentally, have been termed as experimental and require confirmation or further amendment at the beginning of August, 1956, considerably reduces room for manoeuvre of those engaged in thieving and illicit mining practised so extensively in the Gold Coast and in Sierra Leone. Beyond that, however, its significance would appear to be of a local character and cannot be viewed as much more than a step towards building up a government-supported organization to regularize and facilitate the flow of diamonds from British West Africa to the Diamond Corporation which will market the stones.

PLATINUM.—The New York platinum market has been strong during the past week and prices now range between $91 and $96, with the tendency still upwards and offerings tight. Industrial demand has been very active with primary sellers continuing to allocate platinium at $91 to $94, while dealers generally quoted $94 to $96.

The London Metal Market

(From Our Metal Exchange Correspondent)

During the last week the whole atmosphere of the copper market has undergone a complete change and now it is the "bear" points which are being emphasized and the "bull" profits which are being overlooked, which has resulted in an appreciable fall in the price level. The fall in the London quotation has led to uncertainty in America and a reduction in the price paid for scrap by Customs' smelters, as sales of wirebars for delivery after the end of the year are not easy to arrange at a fixed price: for metal for delivery next month as much as 50 c. per lb. is still being obtained.

This desire for nearby metal has also shown itself on the London market by a widening of the backwardation, and it is to be expected that this state of affairs may continue for about another six weeks as after that purchases for inventory purposes will arrive in the works too late. There have been more dealings in options, the Call having changed hands at £15 and the Put and Call at £30. In general, consumer demand is still excellent and it is considered unlikely that the fall in values will be very severe. On Wednesday customs smelters found that they were no longer able to sell copper at 50 c. per lb. and reduced their price. This caused further weakness in London with the liquidation of some bull accounts.

On news that the Penang strike had been settled the tin market developed a weaker tendency, but this was soon reversed on influential buying at the lower levels and the undertone is now better. On Thursday morning the Eastern price was equivalent to £761¼ per ton c.i.f. Europe.

Both the lead and zinc markets have been absolutely featureless, and the trade is now waiting to see whether the U.S. Government will be prepared to pay 15½ c. for the October offerings of lead for the stockpile.

Closing prices and turnovers are given in the following table:—

	September 29		October 6	
	Buyers	*Sellers*	*Buyers*	*Sellers*
Copper				
Cash	£373	£373¼	£357¼	£358
Three months	£368¼	£369¼	£351	£351¼
Settlement	£373¼		£358	
Week's turnover	3,125 tons		6,875 tons	
Tin				
Cash	£750	£750½	£749½	£750
Three months	£751	£751½	£746½	£747
Settlement	£750½		£750	
Week's turnover	345 tons		720 tons	
Lead				
Current half month	£108	£108¼	£107	£107¼
Three months	£107¼	£107½	£106¼	£106¾
Week's turnover	3,425 tons		2,250 tons	
Zinc				
Current half month	£91¾	£91¾	£90¾	£91
Three months	£91½	£91¾	£90½	£90¾
Week's turnover	2,275 tons		3,150 tons	

OTHER LONDON PRICES — OCTOBER 6

METALS

Aluminium, 99.5%, £171 per ton
Antimony—
English (99%) delivered, 10 cwt. and over £210 per ton
Crude (70%) £200 per ton
Ore (60% basis) 23s. 6d./24s. 6d. nom. per unit, c.i.f.
Bismuth (min. 1 ton lots) 16s. lb. nom.
Cadmium 11s. 6d.
Chromium, 6s. 11d. lb.
Cobalt, 21s. lb.
Gold, 250s. 9½d.
Iridium, £30 oz. nom.
Manganese Metal (96%-98%) £269 according to quantity
Magnesium, 2s. 4d. lb.
Nickel, 99.5% (home trade) £519 per ton
Osmium, £24/27 oz. nom.
Osmiridium, £40 oz. nom.
Palladium, £7 10s./£8 0s. oz.
Platinum U.K. and Empire Refined £29 oz. Imported £34 0s. oz.
Rhodium, £40
Ruthenium, £17 oz.
Quicksilver, £92 ex-warehouse
Selenium, 72s. nom. per lb.
Silver, 80¼d. f.oz. spot and 79¼d. f'd
Tellurium, 16s. lb.

ORES, ALLOYS, ETC.

Bismuth .. .. 65% 8s. 6d. c.i.f.
60% 8s. 3d. lb. c.i.f.

Chrome Ore—
Rhodesian Metallurgical (semi-friable) 48% £13 per ton c.i.f.
" Refractory 45% .. £13 per ton c.i.f.
" Smalls 42% .. £10 2s. 6d. per ton c.i.f.
Magnesite, ground calcined .. £26-£27 d/d
Magnesite, Raw .. .. £10-£11 d/d
Molybdenite (85% basis) .. 105s. 0d.-108s. 0d. per unit c.i.f.
Wolfram and Scheelite (65%) .. 272s./276s. c.i.f.
Tungsten Metal Powder .. 21s. 7d. nom. per lb. (home)
(98% Min. W.)
Ferro-tungsten (80%-85%) .. 18s. 7d. nom. per lb. (home)
Carbide, 4-cwt. lots .. .. £39 3s. 9d. d/d per ton
Ferro-manganese, home .. £54 10s. 0d. per ton
Manganese Ore Indian c.i.f. Europe (46%-48%) basis 100s. freight. .. .. .. 84d. per unit c.i.f.
Manganese Ore (38%-40%) .. 69d. per un
Brass Wire .. .. 3s. 4½d. perlb basis
Brass Tubes, solid drawn .. 2s. 9½d. per lb. basis

THE MINING MARKETS

(By Our Stock Exchange Correspondent)

Stock markets have been through another very quiet week although the Chancellor's promise to cut Government spending created a more confident atmosphere and as a result gilt-edged rose sharply. The testing time will come when new wage demands are presented later in the year. Wall Street was very erratic due to President Eisenhower's illness, but the effect of share movements on the other side of the Atlantic was negative rather than positive in London.

Business in the Kaffirs was at a low ebb although the undertone was steady. It is to be hoped that the stagnant period will soon come to an end with fresh news and results which should be obtained from the coming quarterly results.

Among finance houses, price changes were irregular. Johannesburg recovering some of last week's loss and Union Corporation hardening on hopes that at last some announcement concerning the Bethel area will be forthcoming. West Rand Investment Trust shares have acquired from Anglo American Corporation a large block of Buffelsfontein shares; the trust's interest in this mine will now be approximately 20 per cent of the capital.

Among individual Rand mines most of the older properties lost ground but some developing mines improved on hopes that good results will be forthcoming in the quarterly returns. Hartebeestfontein were outstanding in this respect. It is understood that the property has derived considerable benefit from the mechanical handling of ore. Persistent selling of Dominion Reefs continued so that doubts are being expressed concerning uranium developments at the property.

In the Orange Free State share prices were generally easier. Free State Geduld lost ground without any particular reason being assigned to this movement and good monthly returns from the President mines and Virginia failed to halt falls in these shares. The smaller tonnage handled by St. Helena caused lower monthly profits and the shares slipped 1s.

In the West African market, there was little or no activity. Ashanti fell back due to the native labour strike but Western Selection improved on the news that the company is itself going to finance a development on the newly-acquired Canadian property.

In the miscellaneous gold section, favourable press comment and rumours of an impending increase of dividend by Goldfields Rhodesia Development failed to affect the price of the shares. Camp Bird fell back following the chairman's statement that if the 9s. capital distribution is not approved at the meeting a substantial scrip issue may be made

The weakness on Wall Street caused diamond shares to lose initial gains which occurred when the news of the record sales of gem and industrial stones became known. In some quarters it has been pointed out that a high proportion of the industrial stones is going into stockpiling and that any policy change in this direction would have an adverse effect on sales figures.

Coppers were erratic but mostly finished the week easier. The metal price was lower, and the anticipation of good dividend results was cancelled out by reports of a riot at the Nchanga property. There was renewed speculation in Rhodesia Katanga.

Eastern tin shares recorded few interesting changes. It was reported that Siamese Tin may shortly make a formal bid for Renong, Katu and Burma Malay. Prices mentioned for these shares were 33s., 44s. and 24s. respectively, all in sterling.

In the Nigerian section, there was also little of interest. Beralts declined on being quoted ex dividend but Amalgamated Tin were firmer following the publication of the report and accounts

In the lead/zinc market, most of the leading Barriers improved their position after the higher dividend and increased profits announced by North Broken Hill. The price of lead was lower although silver was again at a record high level.

In the miscellaneous base metal market, there was some small inquiry for Wankie. The company's report and accounts are due soon. Associated Manganese hardened when the news of the company's proposed deal with the Gloucester Company reached the public.

Finance	Price Oct. 5	+ or — on week
African & European	3½	—⅛
Anglo American Corpn.	9½	—⅛
Anglo-French	21/6	—3d
Anglo Transvaal Consol.	25/7½	.....
Central Mining (£1 shrs.)	46/6	—3d
Consolidated Goldfields	60/6	—9d
Consol. Mines Selection	41/10½	—7½d
East Rand Consols	2/-	.....
General Mining	4 ⅛	—⅛
H.E. Prop.	7/10½	—3d
Johnnies	44/-	+ 1/3
Rand Mines	3½	+ ⅛
Rand Selection	47/6	+ 7½d
Union Corporation	52/-	+ 3d
Vereeniging Estates	4½	.....
Writs	39/4½	—1/3
West Wits	38/6	—3d
Rand Gold		
Blyvoors	27/3	.....
Brakpan	6/6	—3d
Buffelsfontein	38/6	—1/-
City Deep	11/3	—6d
Consol. Main Reef	22/6	.....
Crown	2½	+ ⅛
Daggas	2½	—⅛
Dominion Reefs	26/-	—2/9
Doornfontein	25/-	—3d
Durban Deep	32/6	.....
E. Champs	5/6	.....
E. Daggas	10/3	+ 3d
E. Geduld (4s. units)	33/-	+ 1/3
E. Rand Props.	3 ⅛	—⅛
Geduld	4½	—½
Govt. Areas	7/3	—3d
Grootvlei	24/-	+ 7½d
Hartebeestfontein	37/6	+ 1/-
Libanon	8/-	—3d
Luipaards Vlei	18/6	—1/-
Marievale	22/9	.....
New Kleinfontein	6/6	+ 3d
New Pioneer	13/6	.....
Randfontein	53/-	—1/6
Robinson Deep	16/9	—3d
Rose Deep	10/-	—3d
Simmer & Jack	4/1½	.....
S.A. Lands	22/6	.....
Springs	4/-	+ 9d
Stilfontein	27/9	—6d
Sub Nigel	35/-	.....
Vaal Reefs	31/9	+ 6d
Van Dyk	4/3	.....
Venterspost	14/9	.....
Vlakfontein	17/9	.....
Vogelstruisbult	30/3	.....
West Driefontein	5½	—⅛
Rand Gold contd.		
W. Rand Consolidated	42/6	.....
Western Reefs	38/1½	—4½d
O.F.S. Gold		
Freddies	7/3	—3d
Freddies Consolidated	5/-	—6d
F.S. Geduld	4½	—⅛
Geoffries	16/-	—1/-
Harmony	32/3	—9d
Loraine	7/9	—6d
Lydenburg Estates	17/6	—7½d
Merriespruit	9/-	—3d
Middle Wits	14/-	—3d
Ofaits	64/-	—1/9
President Brand	71/3	—7½d
President Steyn	34/-	—1/-
St. Helena	30/-	—1/-
Virginia Ord.	12/-	—4½d
Welkom	18/6	—6d
Western Holdings	4	—⅛
West African Gold		
Amalgamated Banket	2/3xd	.....
Ariston	6/3	—1½d
Ashanti	23/6	—6d
Bibiani	4/6	.....
Bremang	1/4½	.....
G.C. Main Reef	2/9	.....
Konongo	2/10½	.....
Lyndhurst Deep	1/4½	.....
Marlu	7½	.....
Taquah	2/-	—1½d
Western Selection	9/10½	+ 7½d
Australian Gold		
Gold Mines of Kalgoorlie	12/6	—9d
Great Boulder Prop	10/9	—3d
Lake View & Star	18/3	—9d
Mount Morgan	21/9	+ 3d
North Kalgurli	7/-	.....
Sons of Gwalia	4/-	.....
Western Mining	9/-xd	—4½d
Miscellaneous Gold		
Cam & Motor	8/10½	—1½d
Champion Reef	4/7½	.....
Falcon Mines	7/6	+ 4½d
Globe & Phoenix	25/-	.....
G.F. Rhodesian	6/9	.....
Motapa	1/3	—1½d
Mysore	3/3	+ 1½d
Nundydroog	7/3	—3d
Ooregum	4/3	.....
St. John d'El Rey	14/9	—3d
Zams	55/-	—1/10½
Diamonds and Platinum		
Anglo American Inv.	9½	—½
Casts	29/9	+ 3d
Cons. Diam. of S.W.A.	7½	.....
De Beers Defd. Bearer	6⅛	.....
De Beers Pfd. Bearer	15½	.....
Pots Platinum	9/9	.....
Waterval	16/o	.....
Copper		
Bancroft	41/-	—1/3
Chartered	70/-	+ 1/6
Esperanza	3/9	.....
Messina	9½	+ ½
Nchanga	15½	—½
Rhod. Anglo-American	5⅛	+ ⅛
Rhod. Katanga	27/6	+ 1/6
Rhodesian Selection	48/3	—3d
Rhokana	41	—1
Rio Tinto	3 ⅛	—⅛
Roan Antelope	27/1½	—9d
Selection Trust	3⅛	—¼
Tanks	8 ⅛	—⅛
Tharsis Sulphur Br.	5¼	—¼
Tin (Eastern)		
Ayer Hitam	22/9	+ 3d
Gopeng	9/1½xd	—1½d
Hongkong	7/10½	+ 1½d
Ipoh	21/9	—1½d
Kamunting	10/-	—1½d
Kepong Dredging	3/6	.....
Kinta Tin Mines	15/3	+ 3d
Malayan Dredging	9/4½	.....
Pahang	13/-	+ 3d
Pengkalen	12/-	.....
Petaling	10/3	.....
Rambutan	20/-	.....
Siamese Tin	8/-	+ 3d
Southern Kinta	19/-	+ 4½d
S. Malayan	8/3	+ 1½d
S. Tronoh	7/10½	—1½d
Sungei Kinta	16/3	+ 6d
Tekka Taiping	7/6	+ 1½d
Tronoh	8/3	+ 3d
Tin (Nigerian and Miscellaneous)		
Amalgamated Tin	12/9xd	+ 4½d
Beralt Tin	34/3xd	—2/7½
Bisichi	5/7½	—1½d
British Tin Inv.	23/4½	—1½d
Ex-Lands Nigeria	2/6	.....
Geevor Tin	14/6	.....
Tin (Nigerian and Miscellaneous) contd.		
Gold & Base Metal	2/1½	.....
Jantar Nigeria	6/9	—3d
Jos Tin Area	14/9	.....
Kaduna Prospectors	2/1½	.....
Kaduna Syndicate	3/1½	.....
London Tin	9/3	—3d
United Tin	2/-	.....
Silver, Lead, Zinc		
Broken Hill South	60/-	.....
Burma Mines	2/6	—1½d
Consol. Zinc	51/6	—3d
Lake George	13/-	+ 1½d
Mount Isa	63/9	+ 7½d
New Broken Hill	41/6	+ 1/-
North Broken Hill	80/-	+ 1/6
Rhodesian Broken Hill	14/4½	—3d
San Francisco Mines	23/6	+ 6d
Uruwira	6/6	—1½d
Miscellaneous Base Metals and Coal		
Amal. Collieries of S.A	51/-	—3d
Associated Manganese	39/-	+ 1/9
Cape Asbestos	9/6	—3d
C.P. Manganese	33/-	—9d
Consol. Murchison	58/9	+ 7½d
Natal Navigation	3 ⅛	.....
Turner & Newall	97/6	—6d
Wankie	16/10½	+ 3d
Witbank Colliery	4	.....
Canadian Mines		
Dome	$29xd	.....
Hollinger	$38½	+ 2
Hudson Bay Mining	$117½	—2½
International Nickel	$140½	—4½
MiningCorpn. of Canada	£8 ⅛	—½
Noranda	$98½	—7
Quemont	£9¼	.....
Yukon	4/1½	.....
Oil		
British Petroleum	5½	—⅛
Apex	32/6	—9d
Attock	41/3	+ 6d
Burmah	3¼	—⅛
Canadian Eagle	47/9	—9d
Mexican Eagle	22/9	—3d
Shell	6½	—¼
Trinidad Leasehold	38/-	—1/-
T.P.D.	26/6	+ 3d
Ultramar	28/-	—9d

COMPANY NEWS AND VIEWS

Rand and O.F.S. September Returns

The most important feature of Rand and O.F.S. returns for September—based on a gold price of 250s. 6d. as compared with 250s. 8d. during the previous month—concerned the grade of gold recovered at Hartebeestfontein, the new Far Western Rand producer. Production at this mine started only three months ago during July when the mill grade recovered was 6.7 dwt. per ton and since then, sharp advances have taken it up firstly to 7.8 dwt. and during September to 8.4 dwt.

Apart from the Harties return the only other excitement was provided by Virginia which recorded a maiden uranium profit of £35,000. Total working profits consequently rose to £64,696 from £27,562 during the previous month. Mines of the Anglo American group made further headway with the two Presidents and the Western Holdings reporting higher working profits.

Company	September 1955 Tons (000)	Yield (oz.)	Profit† (£000)	Year ends	Current Financial Year Total to date Tons (000)	Yield (oz.)	Profit† (£000)	Last Financial Year Total to date Tons (000)	Yield (oz.)	Profit† (£000)
Gold Fields										
Doornfont'n	51	20,423	85·1	J	152	60,711	255·3	150	49,673	245·9
Libanon	97	21,060	59·6	J	293	63,181	177·9	289	60,448	151·6
Luipaards V.	125	18,524	*a*47·4	J	376	56,002	‡166·7	329	65,006	134·7
Rietfontein	26	6,100	20·2	D	238	53,712	187·6	248	55,883	212·5
Robinson	85	17,935	17·5	D	745	159,461	183·5	890	206,254	232·7
Simmer	119	19,900	17·7	D	1,075	79,582	156·0	1,130	182,268	10·9
Sub Nigel	66	21,051	80·7	J	199	63,405	248·6	200	65,636	284·1
Venterspost	121	28,496	78·1	J	371	86,508	245·7	320	78,570	184·8
Vlakfontein	39	14,274	72·4	D	348	123,761	656·8	347	124,126	642·0
Vogels	103	26,569	143·8	D	926	238,703	*b*1158·0	922	233,874	982·5
West Drie	71	54,903	436·9	J	213	164,057	1309·3	155	116,800	907·8
Anglo American										
Brakpan	105	17,998	12·0	D	960	163,831	134·2	993	167,435	120·6
Daggas	219	50,192	303·2	D	2,033	464,294	2846·1	1,999	463,698	2854·0
East Daggas	95	15,810	42·7	D	864	143,983	516·2	840	142,594	416·7
P. Brand	50	40,032	335·6	S	388	295,567	2361·2	61	27,792	134·4
P. Steyn	80	28,599	154·5	S	651	220,163	1053·4	261	73,903	164·1
S.A. Lands	90	17,638	55·0	D	845	160,672	503·6	906	166,856	490·4
Springs	125	15,581	13·2	D	1,080	141,055	81·3	1,162	162,433	68·2
Welkom	80	16,094	14·9	S	715	141,461	91·8	642	128,590	44·9
W. Holdings	71	26,813	158·6	S	593	220,254	1153·7	426	149,468	583·7
W. Reefs Ex.	121	23,286	58·4	D	1,064	200,234	498·9	1,040	204,214	584·7
Central Mining										
Blyvoor	106	60,369	456·6	J	332	187,259	1428·0	324	184,732	1432·3
City Deep	163	30,925	7·3	D	1,446	274,583	13·5	1,475	281,218	145·3
Cons. M.R.	173	24,410	18·2	J	532	74,439	66·2	550	76,820	91·7
Crown	301	46,884	49·7	D	2,708	1,242,122	450·5	2,579	407,559	448·0
D. R'poort	182	31,069	49·9	D	1,624	274,297	451·5	1,600	264,445	413·6
E. Rand Pr'p	208	53,420	176·3	D	1,916	463,705	1461·5	1,826	413,641	1108·7
Harmony	71	26,116	131·7	J	405	73,725	374·6	40	13,007	32·1
Modder B.	53	5,663	1·0	D	509	51,304	9·3	509	53,227	23·6
Modder East	128	13,755	7·7	J	396	41,313	24·8	357	40,709	38·0
Rose Deep	56	8,767	5·2	D	533	83,008	63·4	636	96,555	105·1
Welgedacht	34	3,784	0·6	J	102	11,466	1·6	98	11,590	5·0
J.C.I.*										
E. Champ	20	1,487	*c*6·3	D	179	14,150	‡55·2	203	19,797	57·5
Freddies C.†	76	13,119	L49·9	D	735	129,707	L335·2	708	119,038	L168·0
Govt. G.M.	251	30,509	*d*16·8	D	2,293	288,427	228·1	2,342	304,892	279·5
Randfontein	263	26,738	*e*100·0	D	2,341	258,984	‡844·8	2,585	337,598	268·1
Union										
East Geduld	151	46,601	355·0	D	1,345	413,769	3124·4	1,228	377,603	2760·5
Geduld Prop	104	16,499	45·9	D	821	148,560	407·0	834	135,855	253·1
Grootvlei	200	43,306	259·2	D	1,750	378,613	2207·0	1,622	345,995	1931·4
Marievale	72	18,724	91·4	D	653	166,541	801·4	590	150,324	668·8
St. Helena	105	29,087	152·8	D	938	235,380	1185·2	747	166,270	495·4
Van Dyk	80	13,006	3·5	D	722	119,159	19·2	706	121,611	15·8
General Mining										
Ellaton	31	8,208	*h*33·0	D	276	80,043	383·6	239	71,498	350·4
S.Roodep't	27	6,213	22·3	J	83	18,687	67·0	83	17,988	61·6
Stilfontein	86	33,764	*h*210·5	D	757	297,398	1865·6	740	254,873	1494·8
W. Rand C.	230	25,601	*f*225·6	D	2,134	247,300	2018·6	2,038	256,414	1680·3
Anglo-Transvaal										
Harteb'stf'n	51	21,420	93·9	J	141	54,149	224·1	—	—	—
N. Klerks	11	1,329	*g*2·4	D	101	12,546	3·6	100	8,184	L11·0
Rand Leases	186	29,295	30·7	J	568	89,747	108·2	554	93,256	128·1
Village M.R.	35	5,139	9·7	J	104	15,286	29·1	105	15,606	32·5
Virginia	65	13,968	81·9	J	195	41,917	L168·7	—	—	—
Others										
Nigel Gold	30	3,353	L2·7	D	241	32,280	L17·9	250	38,720	12·7
N. Klein	105	12,627	5·0	D	977	113,876	51·2	969	120,554	130·3
Spaarwater	10·6	2,973	1·1	D	21·1	24,918	10·7	95·9	24,183	3·0
W. Nigel	18	3,979	8·6	J	54	11,917	25·0	52	11,787	28·5

* Working profit figures includes Sundry Revenue.
† Working profit.
‡ Gold and Uranium.
§ Gold and Pyrite.
L indicates loss.
a Including Bird Reef, milled 35,000 tons, recovered 1,521 oz., profit £48,000. Estimated uranium profit subject to adjustment and before allowing quarterly loan instalment of £77,100.
b Including £44,500 uranium profit—before loan and instalment repayments of £38,700.
c After crediting £40,000 estimated uranium revenue.
d After crediting £5,737 estimated revenue from pyrite.
e After crediting £360,000 estimated net revenue from uranium and acid.
f After crediting £274,000 estimated profit from uranium.
g After crediting £4,500 from uranium, before deductions of £625.
h Excluding uranium profit which is declared quarterly.
i After crediting £24,869 from acid, and £35,000 from uranium. No loan deduction in September.

Harmony Conversion Rights Expire December 31, 1955

Harmony Gold Mining Company has issued a reminder that the conversion rights of its 6 per cent Registered Unsecured Convertible notes should be exercised during the period up to and including December 31, 1955. The basis of conversion is 5 ordinary shares for every £6 nominal value of notes surrendered. It is pointed out that while interest earned on the principal sum represented by the notes will normally be calculated as from July 1, 1955, to the date of conversion, it is a special provision of the conditions that in the case of notes surrendered for conversion at any time during December, 1955, interest will accrue in full up to and including the last day of that month (i.e. for the full period of six months.)

Mount Morgan's Lower Grade of Gold

A directors' report issued by Mount Morgan, the Australian copper, gold silver and pyrites producer, in respect of the year ended June 25, 1955, summarises operations during the past 12 months in advance of the company's full report and accounts at present in transit to the U.K.

While the year under review has been one of considerable success—mainly reflecting the high copper prices obtained—an interesting technical aspect presents itself in the form of a considerable decline in the grade of gold recovered. In this respect, the comments of Mr. Malcolm Newman, the chairman, in his last year's statement to shareholders are of particular interest. It will be recalled that during the year ended June 26, 1954, a sharp rise in the grade of gold recovered from 2.45 dwt. to 3.02 dwt. took place. But, as Mr. Newman stated, this increase was not in keeping with the characteristic pattern of the deposit in which the proportion of copper to gold normally rises as mining proceeds. The difference was, in fact, due to a patch of high gold-bearing ground being encountered. The figures in the table below would thus appear to indicate that a more normal trend has now been resumed.

Year to June 25	Mined* Tons (000)	Ore Treated (tons)	Mill Grade Gold (dwts.)	Mill Grade Copper (%)	Recovery Gold (oz.)	Recovery Copper (tons)
1955	3,644.7	930,500	2.14	.87	62,859	7,119
1954†	3,795.6	824,050	3.02	.96	80,670	6,980

* Comprising 2,675,298 tons of overburden and 969,455 tons of ore. (1954 - 2,878,046 tons of overburden and 917,545 tons of ore).
† Year ended June 26, 1954.

Dividends amounting to 25 per cent were paid on the company's issued ordinary capital of £1,400,000 in 10s. stock units. This compares with only 20 per cent in the preceding year.

Year to June	Total Revenue* £	Mining Expenses† £	Net Profit £	Dividends £	To Reserve £	Carry Forward £
1955	3,293,649	2,214,323	684,320	350,000	321,000	492,998
1954‡	2,733,345	2,048,276	440,645	332,802	66,000	479,678

* From sales of gold, copper, silver and pyrites.
† Including £453,497 expended in overburden disgarding. (1954 - £383,228).
‡ Year ended June 26, 1954.

At their present price of around 21s. 6d. Mount Morgan 10s. units return just over 9 per cent.

Uruwira's Plant Not Yet Finished

Although the report and accounts of Uruwira Minerals, the Tanganyikian lead property, for the year ended March 31, 1955, gives encouraging news regarding the new plant at Mpanda, it is apparent that production is still some way away. It is, however, stated that all orders for equipment and materials purchased in the U.K., U.S. and locally, have arrived at the mine or are in the process of being filled. It seems, therefore, that an indication of when the new plant might start up will have to await the statement of Prince A. E. de Ligne, the chairman, at the meeting to be held in Kenya on October 24. Until this takes place all that can be said at the present time is that the target of full scale operations of 30,000 tons milling per month by July, 1955, has not been achieved.

A total of 55,170 dry tonnes (52,357) were treated by the pilot plant during the past financial year. This tonnage assayed 3.47

per cent lead; .72 per cent copper; 94.04 grm. of silver per ton and 1.77 grm. of gold per ton. A flotation concentrate weighing 3,660 dry tonnes was subsequently produced which gave an assay of 47.44 per cent lead; 9.95 per cent copper; 1,241.60 grm. of silver per ton and 22.72 grm. of gold per ton.

Reflecting the lower total of concentrate railings during the past year of 3,695 dry tonnes as compared with 5,706 dry tonnes, revenue from the mine's output dropped to £334,751 from £516,024. After expenses including interest on loans and 5 per cent loan stock, excess of expenditure over income transferred to development account increased sharply to £266,424 from £94,944.

Western Selection to Spend $500,000 on Canadian Exploration

It has been announced by the Western Selection and Development Company that a total of $500,000 will be expended on the further examination of copper, nickel and uranium properties which the company has acquired in the provinces of Saskatchewan and Manitoba, Canada.

The company had previously intended to raise funds for this programme in the United States. However, in view of indications from initial drilling which followed results obtained from a geophysical survey, it was decided to finance the work from funds in hand. Western Selection's major interest in Anglo-Barrington (the Canadian company formed to develop and exploit the properties) has thus been retained. But, it is pointed out, should the potentialities of the areas be proved, a public issue of Anglo-Barrington's capital for actual exploitation would be made.

Beralt Tin's Favourable Wolfram Price

Although a full account of Beralt Tin and Wolfram's trading experience during the year ended March 31, 1955, must await a statement from Mr. F. Gates, the chairman, at the company's meeting to be held on October 28 in London, some interesting details regarding the price of wolfram received have been given in the director's report. It is stressed that although wide market fluctuations took place in respect of the metal from a minimum of 130s. to a maximum of 265s. per unit, the company's favourable long term contracts resulted in an average receipt of 281s. 6d. per unit as compared with the average open market price of just under 200s.

S.A. Torbanite's Lower Profits and Dividend

A dividend of 7½ per cent has been declared by South African Torbanite Mining and Refining Co. in respect of the financial year ended June 25, 1955. This compares with 10 per cent previously. A summary of preliminary profits figures shown in the table below discloses a considerable drop in profits.

Year to June 25	*Total Profit*	*Taxation*	*Net Profit*	*Dividend*	*To Reserve*	*Carry Forward*
	£	£	£	£	£	£
1955	72,578	23,000	49,578	52,008	80,000	32,405*
1954	112,712	30,042	82,670	69,344	Nil	49,835

* After £15,000 written off

Mr. S. G. Menell is chairman.

Kramat Pulai's Higher Output

Production of tin concentrates at Kramat Pulai during the year ended March 31, 1955, increased by 54.14 tons to 225.3 tons. In addition, scheelite output was almost doubled at 33.95 tons as compared with 18.3 tons during the previous year.

Year to Mar. 31	*Total* Revenue*	*Mine Expe's*	*Taxation*	*Net Profit*	*Dividends*	*Carry Forward*
	£	£	£	£	£	£
1955	27,942	7,741	9,070	4,608	5,750	31,244
1954	22,576	8,197	6,987	5,493	5,510	32,386

* Including tribute and sundry revenue of £16,419 and scheelite sales of £9,999 (1954 - £12,568 and £8,399 respectively).

Dividends on the company's ordinary issued capital of £5,000 in shares of 3d. were maintained at 200 per cent. Since the close of the past financial year, a special distribution of 2s. per share has been declared by the company from accumulated balance of profit and loss account. This is payable to holders registered on October 10.

Mr. E. V. Pearce is chairman. Meeting, London, October 10.

Capper Pass Increases Dividend

With the recommendation of a final dividend amounting to 3 per cent on its ordinary capital of £1,220,625 as increased by a one for two scrip issue last November, Capper Pass, the non-ferrous smelters and refiners, have brought total distribution for the year ended March 31, 1955, to 8 per cent. This represents an increase over the previous year's total of 10 per cent on the smaller capital.

Year to Mar.31	*Total Profit‡*	*Taxation*	*Net Profit*	*Dividends*	*To Reserve*	*Carry Forward*
	£	£	£	£	£	£
1955	743,825	314,649	305,637	72,534	200,000*	308,578
1954	670,844	300,295	274,244	61,751	200,000	281,411†

* Including £50,000 transferred to market reserve.
† After transfer of £50,000 from market reserve.
‡ Taking into account profit or losses resulting from fluctuations of metal prices.

Although profit figures shown in the table above disclose a sizeable gain over those of the preceding year they take into account the somewhat uncertain element of stock valuation (during the previous year a loss was incurred under this heading). This hazard is, of course, common to most businesses, but wide fluctuations on metal markets over recent years have greatly exaggerated its effect on companies such as Capper Pass.

Looking towards the future, however, there are grounds for believing that the current firm trend in the price level of base metals (Capper Pass deals predominantly with tin) will continue during the next six months—in fact until the company's year end on March 31, 1956.

Mr. A. D. Pass is chairman. Meeting, Bristol, November 17.

1955 Diamond Sales Should be a Record

Gem and industrial diamond sales, effected through the Central Selling Organization during the first nine months of 1955 at £56,101,559 has established a new record.

Quarter	*Gems*	*Industrials*	*Totals*
1955	£	£	£
September ...	11,138,534	5,581,583	16,720,117
June	12,209,324	5,004,301	17,213,625
March	15,231,054	6,936,763	22,167,817
Total for 1955* ...	38,578,912	17,522,647	56,101,559
1954			
December ...	10,866,174	5,198,192	16,064,366
September ...	11,232,441	3,137,337	14,369,778
June	11,737,546	3,326,371	15,063,917
March	11,773,849	4,881,215	16,655,064
Total for 1954 ...	45,610,010	16,543,115	62,153,125

* Nine months only.

The corresponding figure in the previous record year, 1952, was £53,701,619. Mainly responsible for this achievement has been the improvement (and recent price increase of 2½ per cent) on the gem stone side of the business which recorded sales of £38,578,912 as against £34,430,588 during the first three-quarters of 1952. This advance made up for a slight decline to £17,522,647 from £19,271,031 in sales of industrials.

FINAL DIVIDENDS AND PRELIMINARY FIGURES

Name of Company	*Year ended*	*Final Dividend*	*Net Profit This Year*	*After Tax Last Year*	*Total Dividends This Year*	*Last Year*
		%	(£000)	(£000)	%	%
Broken Hill Sth. *a*	30. 6.55	80	1702.1	1278.4	150	130
Chenderiang Tin	31. 3.55	10	15.5*b*	Dr.14.8	15	nil
Malyasiam Tin	31. 3.55	Nil	4.8*c*	4.3	nil	nil
N. Broken Hill *a*	30. 6.55	100	2011.1	1768.1	180	110
Champion Reef	31.12.54	4*d*	n/a	n/a	4*d*	nil
Nundydroog	31.12.54	4½*d*	n/a	n/a	4½*a*	4½
Trinidad Pet.	31. 7.55	19½*e*	403.1	314.8	23*e*	20
Electro. Zinc	30. 6.55	40	n/a	n/a	55	47½

a Australian currency.
b Before taxation credit of £9,500 (1954—Nil).
c Before credits amounting to £7,708 (1954—£187).
d Free of Indian income tax, but subject to Indian super tax and U.K. income tax.
e Tax free.

Mine Returns

TIN OUTPUT IN TONS OF TIN CONCENTRATES

Company	Aug.	Months since year end	Financial Year to Date This	Financial Year to Date Last	Company	Aug.	Months since year end	Financial Year to Date This	Financial Year to Date Last
EASTERN					Bisichi†	17	8	268½	166
Ampat	133½	8	930½	768½	Ex-Lands	38	8	405	393
Berjuntai	73½	4	323½	235½	Gold & Base	54	8	379	307
Kamunting	195½	5	555	482½	Gold & Base†	16	8	116	82½
Kinta K.	22½	5	64½	121	Jantar	16	11	220	182
Kinta T.	37	8	250½	209	Jantar†	15	11	184	196
Klang River	30½	5	100½	157½	Jos Tin	11½	1	11½	13½
Kramat Tin	29½	5	167½	89½	Kaduna P.	5	8	47½	47½
Kuala K.	a141	5	820	1016½	Kaduna S.	14	8	172	220½
Kuchai	88½	11	648½	302	Keffi†	34	5	138	133½
Larut	69	8	685	752½	Lond. Nig.	22½	5	95½	121
Lower Perak	200½	4	696½	701½	Naraguta Ex.	12½	8	59	41½
Malaysiam	14	5	65	54	Naraguta K.	14½	8	65½	109
Pahang	216	1	216	220	Naraguta T.	13	8	100½	130
Rahman H.	34½	2	67	37	Naraguta T.†	3½	8	58½	53
Rantau	59½	2	142½	107½	Ribon	15	5	73	45
Rawang Conc.	15½	5	115½	271½	Ribon†	3	5	9½	nil
Rawang Tin	95½	5	536	223	S. Bukeru	5½	8	44	52½
Renong	63½	2	140½	227	S. Bukeru†	½	8	5½	2
Siamese Tin	231½	8	1523½	1398½	U. Tin	13	2	29	24
S. Kinta	b208	5	1298½	2048½	U. Tin†	8	2	14½	½
Sungei Kinta	45	8	211	132½	MISC.				
Taiping	56½	8	462½	440½	Beralt Tin	10	5	57	24
Tambah	12	8	102½	164½	Beralt Tin‡	171	5	822	834
Tanjong	92½	8	645½	497½	Geevor	c40	5	261	252
Tongkah	68	2	154½	95½	Sth. Crofty Tin	c44	8	444	388½
NIGERIA					Sth. Crofty Tin‡	nil	8	1½	5½
Amal. Tin	371	5	1797	1991	Tin & Assoc. Min	30½	4	72½	—
Bisichi	45	8	527	382	Tin & As. Min.†	65	4	119	—

* Quarterly
† Columbite
‡ Wolfram
a No. 3 Dredge ceased operation July 31, having exhausted area.
b Kinta No. 1 dredge remained closed for major repairs.
c Low output is due to closing of mine for two weeks holiday.

COAL OUTPUT

Company	August (in tons)	Months Since Year End	Cumulative Totals (in tons) This year to date	Cumulative Totals (in tons) Last Year to date
Amal. Coll. of S.A.	604,909	8	4,645,399	4,608,569
Apex	85,190	8	681,352	641,806
Blesbok	52,018	8	353,506	359,996
Coronation	88,756	8	722,886	689,675
New Clydesdale	71,395	2	141,898	134,892
New Largo	110,833	8	739,324	644,855
S.A. Coal Est.	139,918	2	274,132	267,714
Springbok	75,123	8	573,908	547,581
Transvaal & Delagoa	123,475	12	1,564,081	1,417,438
Van Dyks Drift	52,396	8	463,659	386,142
Vierfontein	124,797	8	881,704	608,297
Vryheid Cor.	51,799	8	373,497	334,626
Vryheid Cor.*	42,673	8	312,717	282,546
Wankie Coll.	283,838	12	3,268,077	2,443,671
Wankie Coll.*	17,347	12	198,674	144,340
Witbank	166,773	8	1,208,252	1,048,685

* Coke.

OIL OUTPUT

Company	August (in tons)	Months Since Year End	Cumulative Totals (in tons) This year to date	Cumulative Totals (in tons) Last year to date
Anglo Ecuadorian	28,267	5	136,636	135,538
Apex Trinidad	37,803	11	411,421	410,182
Kern Oilfields	26,428	3	79,129	79,924
Kuwait Oil	4,824,665	7	31,948,222	26,043,445
Lobitos Oil	44,799	8	351,795	331,068
Qatar	459,595	7	3,043,915	2,668,814
Trinidad Central	8,070	8	65,708	70,750
Trinidad Leaseholds	78,812	2	156,083	160,738
Trinidad Petroleum	43,579	1	43,579	41,499
Ultramar Oil†	106,625	8	857,173	857,300

Note: 1 ton taken to equal seven barrels.
† Output figures are for S.A.P. Las Mercedes in which Utramar holds a 50 per cent interest.

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E. AUSTIN & SONS (LONDON)

The thirty-fifth annual general meeting of E. Austin & Sons (London), Ltd., was held on September 30 in London, **Mr. James Austin,** chairman, presiding.

The following is an extract from the circulated statement by the chairman:

In the year to March 31, 1955, your Company and its Subsidiaries have increased the tonnage of their sales by 5.4 per cent although owing to the increased prices of certain metals, the value of the sales has increased by 21.1 per cent. In spite of these increases, the Group trading profit has fallen from £107,172 to £90,110 and this decrease has been largely due to a lower margin between the buying and selling prices of many classes of goods on the Textile side.

During the year under review the Cleaning Material Section was in a transitional stage as the new factory, which started to operate in 1954, was not in full production until April, 1955. As I mentioned last year, we should feel the full benefit of this new extension in the year to March, 1956.

I am glad to be able to report that, whereas the Textile side was less profitable, the Metal side has shown larger profits which have been earned on an increased tonnage, but trading has been extremely difficult in view of the violent fluctuations in the prices of certain metals, especially in the case of copper.

The Consolidated Balance Sheet shows that the Group has Fixed Assets amounting to £363,680 against £324,574 last year. The Current Assets, however, have increased from £506,171 to £634,237. The larger part of this increase was caused by the fact that stocks stood at £267,157 compared with £168,016 last year. The tonnage of our stocks was only slightly higher compared with last year, but the value was £99,141 higher.

The net profit of the parent company, after charging Taxation, amounted to £12,042 and the Directors recommend a dividend of 2 per cent in respect of the year ended 31st March, 1955, together with a capital dividend of 2 per cent, payable out of the Realised Capital Profits Reserve. This proposal would give shareholders £7,875 in cash as against £18,750 last year.

Since the Balance Sheet date your Board has carried out certain reorganizations within the Group and is taking further action by which it hopes to increase the Group's earning power. However, trading conditions and the labour position combine to make it extremely difficult to forecast future results.

The report and accounts were adopted.

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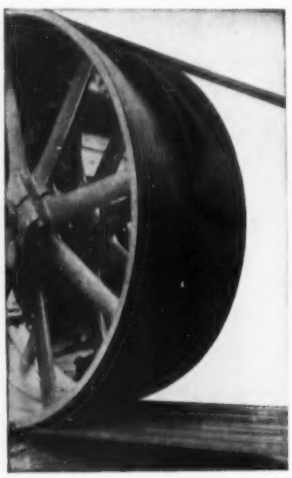

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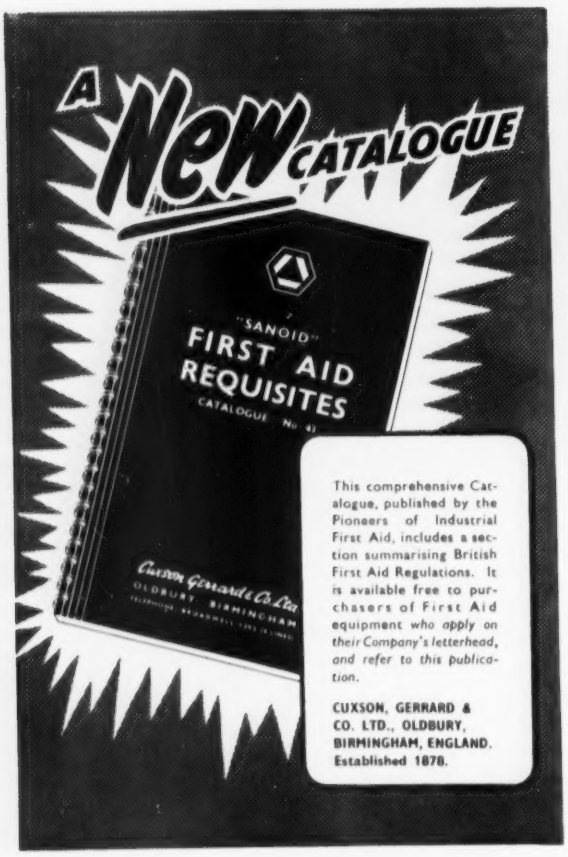
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